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COMMERCIAL CAR JOURNAL

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Use one quart of Permatex Toon-Oyl in the crankcase.

When you talk Permatex . . . you're talking Quality!

PERMATEX COMPANY, INC., BROOKLYN 35, N. Y.

COMMERCIAL CAR

Vol. LXXX Philadelphia, October, 1950 No. 2

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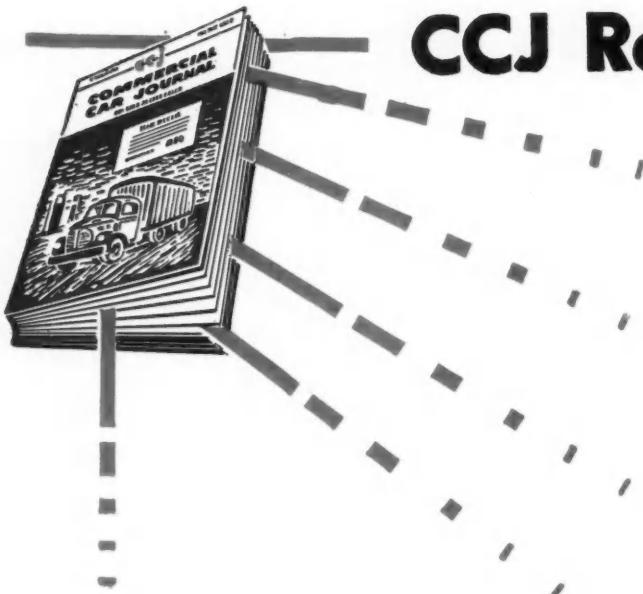
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CCJ Reader Digest



Bonus Boosts Failure-Free Bus Mileage

During 1950, every man on the United Motor Coach maintenance staff stands a good road-failure reducing chance to collect a bonus of \$50 to \$200. And he and his co-workers are using several good methods to insure collecting that bonus. First, they've redefined the term "road failures" to cover mechanical failures—their basic responsibility. Second, they've set up a new set of forms to catch troubles before they happen. Then—but for the rest of this failure-reducing program see Page 56.

Bus Men Prepare to Mobilize

Both NAMBO and ATA (Transit) conventions in Chicago featured mobilization panels and refresher courses on wartime procedures. For a detailed report on what association and industry leaders had to say about rubber, manpower, fuels, lubricants, equipment and parts, turn to page 55.

Through-Lane PM Cuts Cost

James J. Williams, Inc., Spokane, Wash., tried out a through-lane PM system three years ago with the result that major overhauls have been eliminated, engines and transmissions average 200,000 miles and road failures have been reduced an absolute minimum. Best of all, maintenance cost has been cut by 25 per cent. See Page 60.

8,000,000 Trucks Ready to Beat Record

Ted Rogers has been called "Elder statesman of the trucking industry," "Trucking industry's generalissimo during World War II," and other high-sounding titles. To the industry he still is "Ted," and his counsel and comments always worth having. In this article he looks at the industry's role and prospects during the present emergency. See Page 51.

JOURNAL

with which is combined Operation & Maintenance
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Garage-Shop Provides Unity

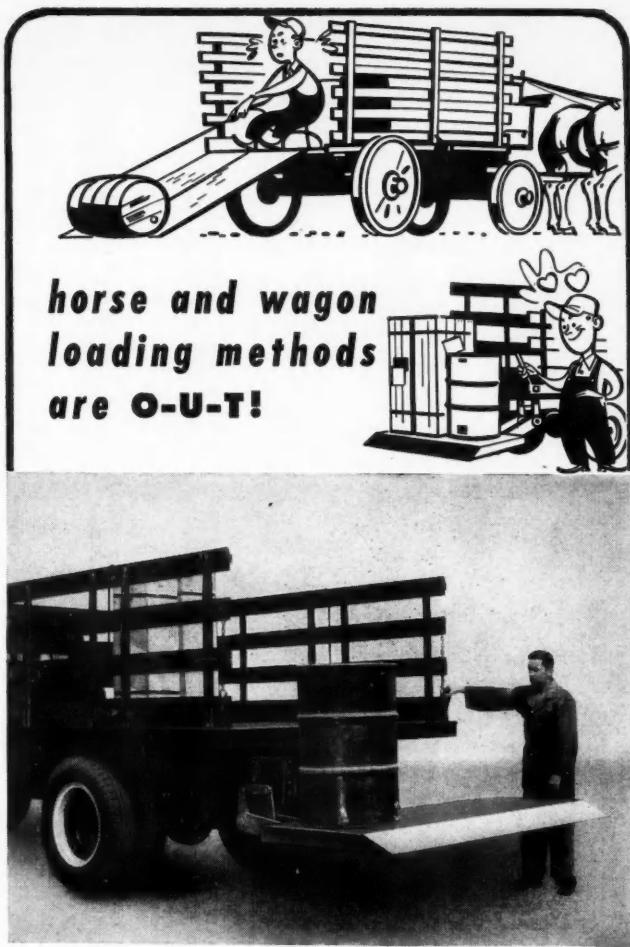
Operations that have the problem of maintaining scattered fleets at more than one location will have many good reasons to study the new combined garage and main shop layout of Detroit Creamery. Not only does this layout permit greater efficiency, economy and maintenance control, but it shows that it is possible to design the combined facilities so that garage traffic will not interfere with maintenance work. For floor plan and details see Page 52.

Coming in November . . .

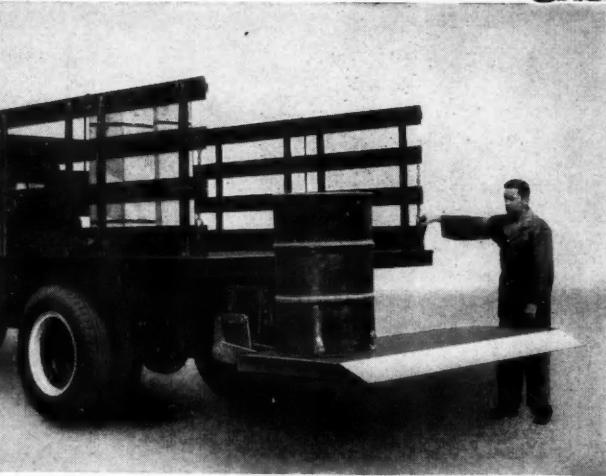
Last year about this time your editors labored long and brought forth a brand new baby—the Buyers' Directory Number for Fleets. For the first time truck or bus operators could get a quick answer on where-to-buy-it problems without writing to the editor. As a result our mail dropped off appreciably, but our work increased for ever since we have been adding new listings and changing old ones to make this year's November Issue as complete and up-to-date as humanly possible. It will show you at a glance just what is available in parts, supplies, equipment, vehicles, etc., and will provide a long list of manufacturers who can supply your needs.

Also, another first-time attraction has been added—a complete directory of associations of interest to fleetmen. We suggest you be on the look-out for your copy and that you lock out the guy who tries to steal it.

COMMERCIAL CAR JOURNAL, October, 1950



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Lubricants and Fuels FOR THE TRUCKING INDUSTRY

CONFERENCE CORNER

PRESENTING FACTORY ENGINEERS' VIEWS ON TIMELY SUBJECTS OF INTEREST TO FLEETS

Subject: Multi-Purpose Greases

Question: What Are The Advantages Or Shortcomings?

SHELL OIL CO., for more than four years, has offered to gasoline reseller outlets and consumer accounts a single lubricant, which we prefer to call a multi-purpose grease, that may be used for the lubrication of all types of automotive equipment under all phases of operation. It is superior to conventional greases in the lubrication of chassis points, universal joints, wheel bearings and water pumps. It has better high and low temperature characteristics from an operational and pumpability standpoint. It is truly a multi-purpose product.

It will not fail in wheel bearings, stays longer in chassis fittings, because of high mechanical stability and high resistance to water.

Lower consumption. Users report up to 50 per cent savings in the amount of grease required per lubrication job.

No costly errors are possible. Operators cannot apply the wrong grease.

Although the initial cost per pound may in some instances be higher than some brands of conventional greases, we feel that the savings in consumption makes a multi-purpose product, like Shell Retinax "A," a more economical product to purchase. Our multi-purpose grease will withstand both high and low temperatures. Conventional greases won't. We feel there are no restrictions required in the application of our multi-purpose grease other than the precautions normally observed in the lubrication of automotive equipment.

It Is Superior to Conventional Greases

by Leonard Davis

Shell Oil Co.

LUBRICATING grease has been manufactured and used in industry for a great many years. It found favor in locations where designers did not provide oil-tight housings for shaft bearings and on slow moving equipment where constant attention, to lubrication, was not required.

As speed, loading and close tolerances gradually evolved to modern equipment, specialized greases were developed to meet particular requirements so that manufacturing plants often inventoried several types of greases to meet their needs. Automotive equipment reached a stage where some five or more types of grease were required for a complete lubrication job.

The comparatively recent development of lithium base greases seems to offer a solution to many problems presented with grease lubrication. Lithium produces a grease of unpredictably wide temperature range. Lubrication studies on lithium greases indicate that a single product may operate effectively at temperatures ranging from tropic heat (140 deg. F.) to sub-stratosphere cold (-67 deg. F.). This extreme is not found in practice but in automotive service wide variations in operating temperature are encountered. Lithium type grease may be used in automotive service for ball and roller bearings, chassis lubrication, grease lubricated universal joints, wheel bearings and water pumps. In industrial plants

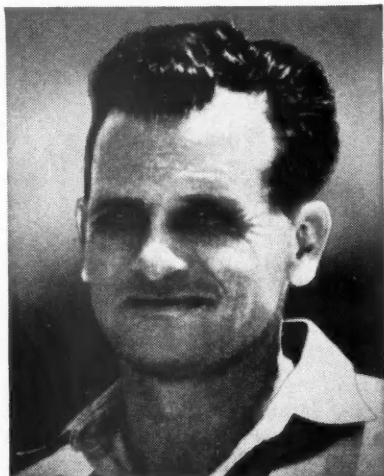
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Offers Operating Efficiency and Simplicity

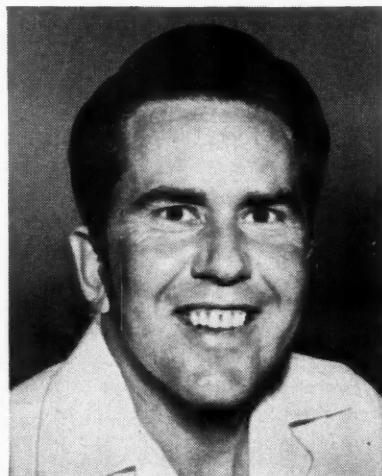
by C. W. Larson

Sinclair Refining Co.

"a real money saver"



E. M. ROSEBERRY, Driver
Carnation Company
Houston, Texas



BYRON LEFTWICH, Parts Manager
Carnation Company
Houston, Texas

"Old Man Trouble took a fall when we switched to the Auto-Lite Sta-ful Battery. It's great to have a battery that doesn't turn up short of power with plates dry and maybe ruined if someone skips a water check.' This statement of E. M. Roseberry shows how our drivers go for Sta-ful." Byron Leftwich, Parts Manager, Carnation Company, Houston, Texas.

HERE'S WHAT Sta-ful DOES FOR YOU

- 1 Needs water only 1/3 as often.
- 2 Helps keep plates fully covered for abundant starting power.
- 3 Reduces time and bother of battery servicing—lasts longer too.
- 4 Helps reduce operating costs by keeping fleets on schedule.



Conference Corner

Continued from Page 6

and on shipboard it will replace cup grease and sodium-type greases. It has the added advantage of being suitable for compression cups, pressure-gun applications and mechanical distributing systems.

The happy choice of the name "Multi-purpose" very aptly describes the characteristics of this remarkable product.

It has a wide temperature service range, non-emulsifiability, very stable shear, it is chemically stable and if liquefied by flash temperatures above its melting point, it will reform to a stable grease upon cooling.

The first cost of multi-purpose grease is slightly higher than the other types with the exception of the water pump grease. For instance, if the first cost of lithium multi-purpose grease is taken as unity, then the present price per unit will be:

Multi-purpose grease	1.0
Cup grease	.49
Pressure system grease	.56
Chassis lubricant	.77
Water pump grease	1.40

However, the price paid does not properly reflect the actual cost of lubrication because in automotive practice one product replaces four or five and in industry, it replaces two or more, according to the actual inventory carried and insures the right product being used in every application.

The only possible argument against the use of multi-purpose grease in any plant is in the case where the equipment is old or so badly worn that excessive wastage is evident and where there are no ball or roller bearings in use.

LITHIUM or barium soap base greases, as well as several other types of special soap bases, possess both high melting points and good water resistance, and for this reason have been referred to as "All-Purpose," "Multi-Purpose," "General Purpose," and "Multi-Functional" greases. These products are recommended for any or all points of lubrication on automotive equipment as compared to conventional lubricants which are specialized for particular applications. There has been much discussion pro and con about the advantages and disadvantages of lubricating parts operating under a wide range of conditions. In making comparisons, it should be remembered that there are a great many brands and types of both the conventional greases and the multi-purpose greases.

All-Purpose Greases Are Recommended

by M. D. Gjerde
Standard Oil Co. of Indiana

In our opinion, a lithium soap grease containing a heavy oil will be equally as satisfactory, from a lubrication standpoint, as any of the conventional specialized lubricants.

Multi-purpose greases offer no quality improvement over the specialized lubricants for a particular job. The only real advantage is the fact that several specialized lubricants can be replaced with one lubricant, thereby simplifying stocking and handling.

Multi-purpose greases are higher in price than the conventional chassis lubricant or pressure gun grease. Their cost is about equal to that of wheel bearing greases or ball bearing greases. However, the large per cent of the grease used is the pressure gun type, so over-all cost of using a multi-purpose grease would be considerably more.

Multi-purpose greases will withstand higher temperatures than chassis greases (lime soap greases), and have about the same high temperature limitations as wheel bearing greases (soda soap greases). At low temperature, the dispensability and lubricating value depends to a large extent upon the viscosity of the oil present in a grease. Multi-purpose greases containing an oil heavy enough to satisfactorily lubricate wheel bearings generally are more difficult to dispense at low temperatures.

They Represent a Compromise in Optimum Qualities

by J. B. Smith

Esso Standard Oil Co.

A TRULY general purpose grease would be adaptable to all vehicles under all types of operation, but this would be an ideal product, and we do not know of any such grease now available. Some grease applications on some vehicles are, of course, considerably more critical of grease properties than the average of heavy-duty service, and it seems unlikely that any one grease could do every job now done by many lubricants. Even if such a product proves feasible technically, economies might dictate against its widespread use.

In addition to convenience in handling and simplicity of inventory, multi-purpose greases offer the advantages of: (1) minimizing contamination since only one container of grease need be open at a time, and (2) more efficient lubrication by eliminating the possibility of lubricant misapplication in cases where poorly trained personnel may be employed.

Multi-purpose greases are considerably more expensive than chassis greases, usually costing as much as and frequently more than bearing greases.

In using multi-purpose greases, the quantity used and lubrication intervals would be essentially the same as with regular lubricants. In temperature range a good multi-purpose grease must give good results in both low and high temperature service.

We do not feel that multi-purpose greases are necessarily advisable or attractive for service station and general automotive lubrication since by far the largest volume of automotive grease is for chassis lubrication, and any multi-purpose product with the necessary properties to do a good bearing lubrication job is considerably more expensive than chassis grease and therefore penalizes the user from a cost standpoint. Also many multi-purpose greases represent some com-

(TURN TO PAGE 202, PLEASE)

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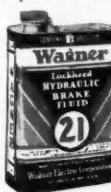
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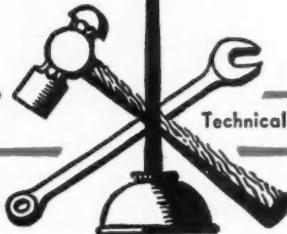
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1140-22

At Your Service

By M. K. SIMKINS

Technical Editor, Commercial Car Journal



Novel Insulation Technique

A Chicago fleet, the Lasham Cartage Co., has developed a method of insulating the oil pan, timing case and valve cover of its trucks in a move to keep the oil at a higher temperature and retard the formation of sludge and varnish. Other city fleets or fleets located in colder regions may well look into it.

For insulation the fleet is using pieces of Met-L-it Fiber, a product developed by R. M. Hollingshead Corp. for body repairs. Parts are cleaned and these pieces are dipped in solvent and applied to the oil pan, timing case and valve cover. Then the surface is given a hard metal coating with a brush. Thus the surface will not rust and can be easily cleaned of grease if ever necessary.

Battery Failures Can Be Cut

It is generally recognized in the field that overcharge is the chief cause of battery failure. Yet the same fleetmen who can detect this trouble at a glance (disintegrated grids, loose biscuits of active material and charred separators) apparently have not done enough groundwork among their mechanics to stop future breakdowns.

A recent CCJ survey shows that batteries last on an average of 35,000 miles for a wide cross section of the industry. How much this figure was lowered due to premature failures from overcharging was not indicated here, but a Willard survey does show conclusive evidence that overcharge is the No. 1 boogie. Of the thousands of failed batteries analyzed by Willard engineers 42.35 per cent showed positive plate corrosion; 12.3 per cent showed evidence of positive plate buckling. Total failures in this test revealed that 54.6 per cent were a direct result of overcharge.

Overcharge is prevalent today because batteries are called upon to power a lot of extra heavy-duty accessories. Generator output must of necessity be at a high rate, a factor creating heat. Battery compartments are not well ventilated in most cases, some even being under the hood, where they are subject to additional heat from the engine. And when battery temperatures go up, full-charge voltages come down. In some cases the full charge voltage of the battery is lower than the setting of the voltage regulator, and the charge rate is not cut down quickly enough when it reaches full charge. At this point the charging current causes a reaction between the grids and the electrolyte, and the grids break down.

Remedial measures are well known—keep battery temperatures as low as possible, check charge rate frequently. All of this suggests the remedial measures in itself. It is up to the fleetman, then, to assume that a great percentage of his premature failures can be cut—and then to see that proper steps are taken.

About Silicone Polishes

A warning comes from Sherwin-Williams in the form of a report that vehicles which have been treated with silicon based polishes require special procedure in the refinishing shop. Unless this polish is removed, "fish eyes" result in the refinished surface as the silicone is incompatible with paints and lacquers and the two substances will not bind. It is recommended, therefore, that the surface be washed with xylol, sanded with No. 400 paper, washed clean with xylol again, and finally dried with a clean cloth. There appears to be no way to detect whether a silicone product has been used, so Sherwin-Williams recommends that in cases of doubt a small surface be sprayed to see if the new paint tends to crawl, pit or crater.

Refinishing Cylinder Walls

One of the prime requisites of a good cylinder boring job is that the boring bar be aligned properly on the block so that cylinders are bored square with the crankshaft. This can be accomplished only after scale and carbon are removed from the top of the block. The boring tool must be resharpened frequently and to the angles recommended by the boring bar manufacturer if a satisfactory surface is to be obtained. For the first cut the tool setting should be .001 in. less than oversize of the pistons. This allowance is for removing the rough finish with a final hone.

Clean-up is tedious but will determine the satisfaction realized from the job. With a wet operation oil holes in the crankshaft journals should be taped to preclude the possibility of foreign particles getting into the oil stream. Most manufacturers recommend the use of soap and hot water to loosen particles of metal and grit. Many shops use masking tape to cover valve ports and other water passages and find clean-up time can be cut when the hone dust can be confined to local areas. While many bars are available with vacuum type grit removers, the above washing procedure is still recommended as a precaution. After a thorough cleaning, the block should be dried and coated with a light film of machine oil.

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The

OVERLOAD

EDITORIAL COMMENT

"Go to the Ant, Thou Sluggard; Consider Her Ways and Be Wise"

(Proverbs 6,6)

IT is scarcely conceivable that a publication serving the truck and bus industry could go to press on this particular date without taking some cognizance of David G. Wittels' article, "Are Trucks Destroying Our Highways?" which appeared in the September 16 issue of the *Saturday Evening Post*.

In the few days which have elapsed since that appeared and this is written, we have recalled many things, beginning with another article in the *Post* entitled "Freight Trains on Our Highways" which was published on August 19, 1939. There is a tremendous difference between the two. The first was based largely on personal venom later confirmed in an interchange of revealing correspondence between CCJ's former Editor George T. Hook and the *Post's* former Editor Wesley Winans Stout. It was filled with loopholes through which any one well versed in facts of the industry could throw truck-loads of evidence.

But the current article is of different stock. It is based almost entirely on indisputable records which writer Wittels consulted and quoted. True, the article picked on the industry's "soft underbelly," giving more importance to the game of "cops and robbers" (played between overloaded trucks and enforcement officers) than we believe warranted. But the facts he used were on his side.

Between these articles were many more. Among the 1950 crop: "The Rape of Our Roads" in the June *Readers' Digest*; "All the Railroads Want Is a Fair Deal" in the July *Readers' Digest* and "Our Roads Are Going to Pot" in the September issue of *Harper's Magazine*. Even the *American Agriculturist* came into the act with a bitter editorial in its September 2 issue entitled "Heavy Trucks, Roads and Taxes."

What we find alarming is the one thing that all of

them have in common. Whether the articles are based on fact or fantasy, whether inspired by personal venom or honest research, they *all* came into being as the result of a single word. That word is VIOLATION. And its ramifications, in approximate order of anti-truck appeal, are (1) overloading, (2) over-speeding and (3) tailgating.

Despite popular opinion to the contrary, it is only a fringe element of the industry that is guilty of these violations. The great majority of operators and every one of the National and State associations are doing their best to stop them. Still the adverse publicity comes on.

Recently we had a friendly visit with a number of key executives of Westinghouse Electric. Although Vice-President (ship-everything-by-rail) Phelps was not present, his views were well supported by his staffmen. When asked what was wrong with the truck picture and why they had personal, if not professional, objections to the industry, every one of their answers was based on violations. At day's end we reached what one of them aptly called an "armed truce." "Cut out the violations," they said, "and we'll respect your industry."

True, let us hasten to add, few in the industry care what these Westinghouse officials think. The point is their opinions are typical of the American public—millions of them who read with glee each new attack in the popular press. And each of them carries a vote on election day.

It seems to us the time has come to heed the advice of those much publicized ants who were taking a terrific beating from the undercuts of a duffer golfer. Finally one of them spotted a safe resting place. "Come on," he said, "if we're going to stay alive, we better get on the ball!"

Bart Rawson
Editor

CCJ REPORTS

on News of the Industry

Bus Men Hold Conventions

Two national conventions for bus operators were held in Chicago recently with both groups eyeing the war outlook and laying plans for an offensive of their own. NAMBO, the National Association of Motor Bus Operators, met at the Drake Hotel, Sept. 13 to 15, while the American Transit Association held its Emergency Executive Conference later (18th and 19th) at the Stevens. Representatives from both the intercity (NAMBO) and the local transit group (ATA) took on what amounted to a refresher course in wartime passenger carrying problems. For a complete report on these well-prepared and well-executed programs, see page 55.

Truckers Prepare For Legislatures

The trucking industry is expecting to have a very rough time in state legislatures next year and preparatory moves are underway. One is the formation in several areas of associations under various names which include not only trucking associations but also shippers and private truck owners. The idea is to bring in all interested parties and enlist their financial assistance in presenting the trucking industry's side of the story to the legislators.

Mich. Questions Tax Exempt Fines

Michigan is one of several states that has been kicking up a fuss with the Bureau of Internal Revenue for allowing truck overloading fines to be deducted as a business expense for tax purposes. The Bureau is reported to be reviewing a 1942 ruling permitting such deductions during wartime on the basis that overloading fines were similar in character to such charges as bridge tolls. Michigan's Governor Williams

has been jacking up state's enforcement agencies dealing with enforcement of the state laws dealing with overloading.

Keeshin Acquires Conklin Truck Line

John L. Keeshin, formerly head of Keeshin Motor Freight System, one of the largest trucking organizations in the country, is back in the trucking business. He has acquired the Conklin Truck Line of Toledo and Adrian, Mich., which has been in business for 27 years and currently has a fleet of about 300 units. Keeshin founded the Keeshin Motor Freight System and was its head until 1945.

Thompson Buys PC

An agreement has been announced providing for the merger of Perfect Circle Corp. with Thompson Products, Inc., by the exchange of Perfect Circle's assets for Thompson common stock. The announcement of the bringing together of these two organizations was made jointly by Frederick C. Crawford, Thompson president, and Ralph R. Teetor, president of Perfect Circle.

The present management of Perfect Circle will continue to direct the company's affairs, and present sales and merchandising policies will not be affected.

Freight Volume Sets Record

The volume of intercity tonnage transported by Class I intercity motor carriers of property climbed 24.5 per cent in the second quarter of 1950 above the volume hauled in the second quarter of 1949 to establish an all-time second quarter record.

This marked the sixth successive year that a second (TURN TO PAGE 182, PLEASE)

DATES and DOINGS

OCT. 9-13—Fleet Supervisors Training Course, University of Minnesota, Minneapolis, Minn.
OCT. 16-18—Society of Automotive Engineers (Transport Meeting), Hotel Statler, New York, N. Y.
OCT. 16-20—38th National Safety Congress and Exposition, Chicago, Ill. Sessions at Stevens, Congress and Morrison Hotels.
OCT. 20-21—Indiana Motor Truck Assn., Annual Convention, French Lick Springs Hotel, French Lick, Ind.
OCT. 24—Motor Transportation Assn. of Connecticut, Annual Convention, Bond Hotel, Hartford, Conn.
NOV. 1-3—American Society of Body Engineers, 5th Annual Technical Convention, Rackham Memorial Bldg., Detroit.
NOV. 2-3—Society of Automotive Engineers Diesel Fuel Meeting, Hotel Knickerbocker, Chicago, Ill.
NOV. 2-3—Arkansas Bus & Truck Assn., Annual Convention, Marion Hotel, Little Rock, Ark.
NOV. 9-10—Society of Automotive Engineers Fuels & Lubricants Meeting, Mayo Hotel, Tulsa, Okla.
NOV. 13-17—Fleet Supervisors Training Course, University of Virginia, Charlottesville, Va.

NOV. 16-18—Montana Motor Transport Assn., Annual Convention, Rainbow Hotel, Great Falls, Mont.
NOV. 20-24—Fleet Supervisors Training Course, Georgia School of Technology, Atlanta, Ga.
NOV. 26-DEC. 1—American Society of Mechanical Engineers, Hotel Statler, New York, N. Y.
DEC. 3-4—Missouri Bus & Truck Assn. Annual Convention, Governor Hotel, Jefferson City, Mo.
DEC. 4-8—Automotive Service Industries Show, Navy Pier, Chicago.
DEC. 7-9—Oregon Motor Transportation Assn. Annual Convention, Hotel Multnomah, Portland, Oregon
DEC. 8-9—New Mexico Motor Carriers Assn. Annual Convention, Hilton Hotel, Albuquerque, N. M.
JAN. 7-10, 1951—National Automobile Dealers Assn. Convention and the N.A.D. Equipment Exhibition, Municipal Auditorium, Miami Beach, Fla.
JAN. 8-12—Society of Automotive Engineers Annual Meeting and Engineering Display, Hotel Book Cadillac, Detroit, Mich.
JAN. 31-FEB. 4—Automotive Transport Trades Council Transport Vehicle Show, Madison Square Garden, New York, N. Y.

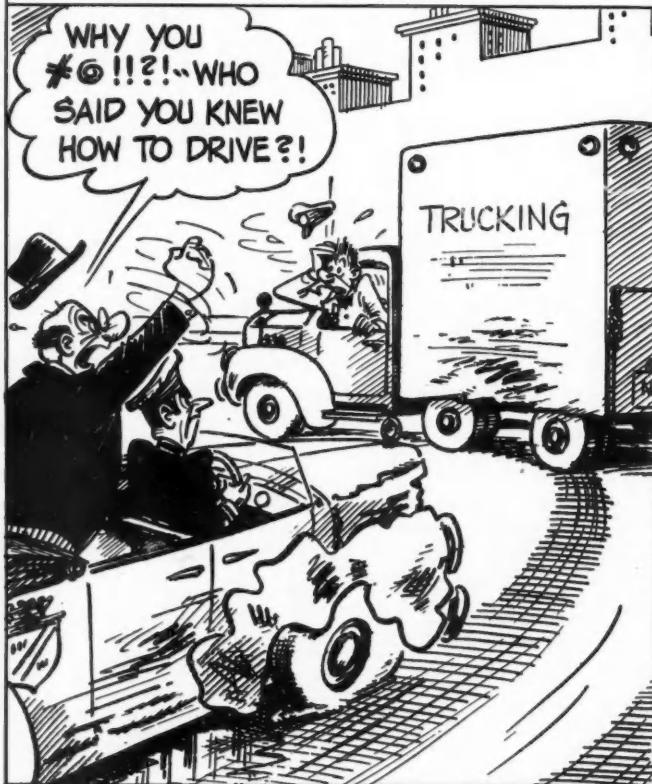
"THEY NEVER MISS . . .!"

by Gum

DEAR DIARY: THE MAYOR HIMSELF PINNED A MEDAL ON ME TODAY FOR BEING THE CITY'S SAFEST TRUCK DRIVER...



...BUT GUESS WHO'S CAR I RAN INTO LEAVING THE BANQUET PARKING LOT? YEAH, YEAH . . . HIZZONER'S!



Copyright 1950, Prest-O-Lite Battery Co., Inc.

Avoid trouble...Install Hi-level!

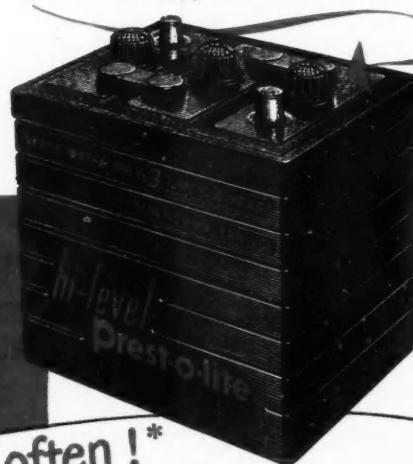
Look how you benefit . . .

- ★ 70% LONGER AVERAGE LIFE—in tests conducted according to S.A.E. Life Cycle Standards.
- ★ LESS SERVICING—reduces time and bother of servicing and checking batteries.
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Find how Hi-Level can help end battery grief, cut costs for you. See your Prest-O-Lite distributor for complete information or write to

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Toledo 1

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hi-level battery

... needs water only $\frac{1}{3}$ as often! *

*As batteries without the
Hi-Level features.

DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

Chance of Sales Record Still Good

Even though truck sales have eased off from the record high levels reached in July and early August as a result of scarce buying, there is a good chance that the industry this year will ring up the highest sales and production record in history. Unless material shortages interfere too greatly, the production of 1.4 million trucks is considered a good possibility with sales between 1.1 million and 1.2 million.

... but Truck Prices Are Up

Truck prices have been raised by several of the smaller truck builders and one large company and it is certain that the rest of the industry will follow suit soon. Increases include Diamond T, 6 to 8 per cent; White, \$200 to \$600; Reo, \$164 to \$286 (with no change in the price of the E-19 Speedwagon), and International, an average of 4.8 per cent. The increases were inevitable because of the rising tide of wage and material costs. In fact, some companies who have already raised prices hint broadly that a second increase may be necessary when increased wage costs spread throughout the entire supply industries. The larger manufacturers such as Ford, General Motors and Chrysler are better able to absorb some of the added costs, but it is certain that they are not going to continue decreasing their profit margin and a price boost certainly is on the way.

No New Credit Restrictions Yet

So far as can be determined now, new credit regulations will not be applied to purchases of new or used trucks. Current regulations require a down payment of at least one-third and a maximum of 21 months on the balance on passenger car sales. Similar restrictions in the sale of trucks might result in a big slump in business judging from the reports we get of some deals being made with nothing down and several years on the balance on very heavy units.

GVW Ratings Under Discussion

The gvw rating question is by no means settled despite the agreement among manufacturers that all would adopt such ratings. The gvw system was adopted at the insistence of the motor vehicle administrators, but has never been fully accepted by the trucking industry. A committee appointed by ATA will discuss the matter with manufacturers in the near

future. The general feeling exists that the ratings have not been adopted in full even by some manufacturers and there is likely to be a good deal of wrangling before the matter is settled one way or the other.

Trailer Output Way Ahead

The truck-trailer builders, like the vehicle manufacturers, are doing much better this year than they did a year ago. For the first six months of this year the industry built 26,270 trailers, compared with 16,129 units for the same period of 1949. In addition, the first six months of last year accounted for three-quarters of the total for the year whereas currently orders are continuing at a high rate and for the year will exceed the 1949 total by a wide margin.

Light Cummins Gets Builders' OK

Several truck manufacturers are interested in the new Cummins 150 horsepower diesel and at least two of them are planning to use it within the next few months. It is understood, however, that production of the new engine is at a very low rate and one of the two companies does not expect to have the engine available until next Spring.

Ford Uses Auto-Thermic Pistons

Ford is using auto-thermic aluminum pistons in all its six-cylinder truck engines. The piston has a steel strut to control expansion, permitting closer tolerances in fitting and is said to give longer ring life, less oil consumption and reduced cold engine piston noise.

GMC Diesel Training For Fleets

Fleet operators are eligible to send mechanics to the new GMC diesel service training course just getting under way. The course is aimed primarily at training 1500 mechanics at 1000 dealerships throughout the country. Several mobile units will be used to give actual on-the-job instruction under supervision of instructors from the factory and from Detroit Diesel Engine Division. The course is designed to be a nuts and bolts type of instruction with the men working with the engines under expert supervision. Sessions will run eight hours a day for five days. Fleet operators may send their mechanics to the school free of charge by getting in touch with the GMC field representative in their area.

TRU-STOP Emergency BRAKES

HERE'S SAFETY THAT PAYS OFF
FINNCE

SAFETY ALWAYS PAYS OFF

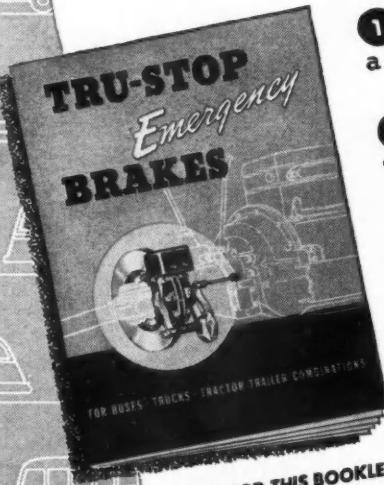
But here's a safety measure that pays off in over-all economy
as well as a good accident record.

Consider these facts about TRU-STOP Emergency Brakes:

1 Operating on the propeller shaft, they constitute a complete and independent braking system.

2 In addition to being good parking brakes, TRU-STOPS are engineered to decelerate and stop the loaded vehicle—repeatedly—without damage to linings. They are real emergency brakes—able to pinch hit for service brakes if necessary.

3 TRU-STOPS rarely need service. When they need adjusting or relining, the job is a simple one for any mechanic with ordinary tools. Saving in maintenance is many times the slight additional cost of TRU-STOPS.



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AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

In Business for Your Safety





WASHINGTON RUNAROUND

by GENE HARDY

Washington Correspondent

Transportation Controls

Control of domestic motor, rail and inland water transportation, under the Defense Production Act, has been assigned to the Interstate Commerce Commission. The Commissioner in charge of the new activity is James K. Knudsen, the youngest member of the ICC in both years and length of service. Mr. Knudsen fell heir to the job when it was turned down by ICC Chairman J. Monroe Johnson. Col. Johnson, who headed up ODT during the latter part of World War II, refused the job on grounds of age.

Mr. Knudsen's first orders were directed to the railroads and designed to speed up freight car usage. One of these restricted the use of freight cars for LCL shipments within a municipal switching area and directed the use of trucks for this purpose . . . The new domestic transportation boss has had limited transportation experience through his work in the Agriculture Dept., which he represented in various rail rate cases. He has assured trucking interests that he is now making a thorough study of the position of the trucking industry, both as to equipment and importance in the national economy . . . Mr. Knudsen has been urged to pass motor carrier problems to the Bureau of Motor Carriers and it is anticipated that he will do so . . . Meanwhile, it is expected that an organization will be set up with divisions for manpower, materials and equipment . . . Plans for a separate agency are also being drawn up. They will be used if the mobilization job begins to approach World War II scope.

Production Controls

The National Production Authority, within the Commerce Dept. is the key production control agency. Allocations, priorities, inventory controls, conservation and limitation orders affecting the products used by trucking industry will be administered by NPA. The only exception is petroleum products which are controlled by the Interior Dept. . . . The first NPA orders restricted manufacturing inventories of critical materials to practicable working levels and established priorities for defense orders . . . NPA plans to set up a new Transportation Equipment Division to look after the needs of the transportation industry in regard to equipment . . . ICC will be the claimant agency for the allocation of materials for the manufacture of trucks, trailers and other transportation items . . . ICC will also be the claimant agency for petroleum products should this become necessary . . . In other words, ICC will represent the trucking industry before

other agencies in the event of shortages which may require allocations or rationing.

Price, Wage and Credit Controls

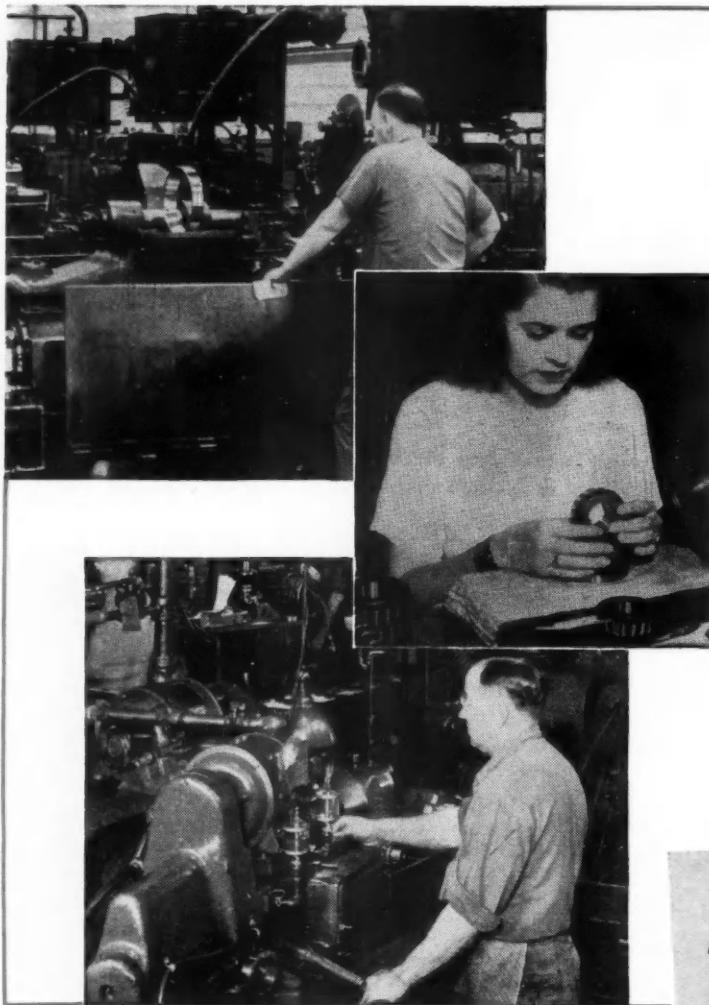
Common carrier rates are exempt from the provisions of the price control sections of the new law. However, if price and wage controls are invoked, notices of rate increases must be filed with the Economic Stabilization Agency 30 days in advance and carriers must consent to intervention by ESA before the body considering the increase. This is similar to World War II law under which OPA intervened in many rate cases . . . Common carriers are also exempt from the Presidential order requiring preservation of price and cost records for the period May 24-June 24 . . . Price and wage controls may come faster than most people seem to believe, although not until after the November elections. . . . The new controls on consumer credit and installment buying, which became effective Sept. 18, do not apply to trucks or truck replacement parts. Trucks may be purchased without regard to the 1/3 down payment provision for passenger cars.

Legal Log Logistics

Reports that the long-awaited revision of the ICC Motor Carrier Safety Regulations have been shelved as a result of the increased mobilization work-load are not true. At press time the Bureau of Motor Carriers was preparing to send copies of the final draft to the Commissioners with a recommendation for public hearings. It is possible that the Commissioners may decide to hold up the proceedings, but there is no disposition to do so within the BMC . . . Freight forwarder legislation was swallowed up in the last-minute rush to adjourn. The bill, which would give common carrier status to forwarders, had passed the House, but never got before the Senate. Unless Congress returns to Washington after the November elections, the legislation will have to be re-introduced at the next session in January.

Leasing Regs Postponed

The ICC has postponed indefinitely the widely-debated leasing regulations, which were scheduled to become effective on Sept. 18. (See CCJ, August, page 112.) All sorts of petitions for delay were presented; most of these asked for oral argument. The Contract Carrier Conference of ATA and the Teamster's Union want trip leasing abolished. The National Industrial Traffic League even challenged the authority of the ICC to regulate leasing.



1 out of 3 are inspectors!

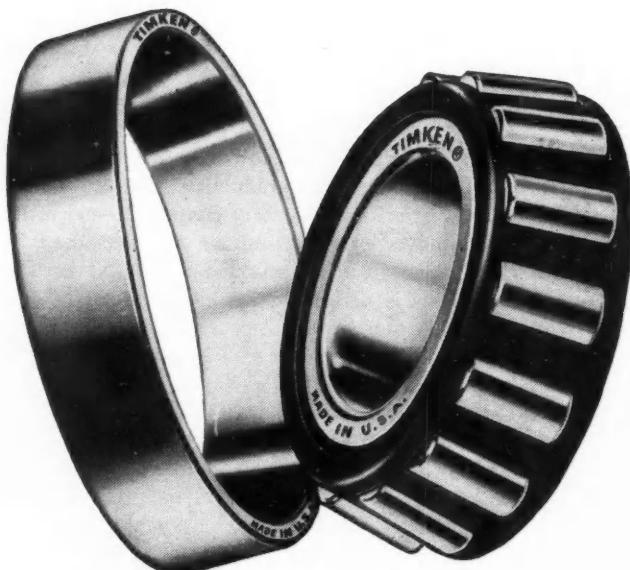
More than one-third of the factory personnel in the Timken® roller bearing plant devote their full time to inspection. Working with the most modern scientific measuring devices—many specially developed by Timken—Timken inspectors check the precision of every Timken bearing before it leaves the plant. Every step in manufacture, from the melting of the steel to the final assembly of the bearing, is rigidly controlled. This intensive inspection which assures uniform top quality in the Timken bearings you use, is one of the many reasons why Timken bearings are first choice with leading truck manufacturers.

Another reason why 
**TIMKEN® bearings are first choice
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SINCE THEY'RE BEST WHEN THE TRUCK IS NEW ... THEY'RE BEST FOR REPLACEMENT, TOO!

YOU CAN'T GO WRONG when you use Timken bearings for replacement. Timken bearings last longer under the toughest loads. They reduce friction to a minimum and hold wheels and shafts in proper alignment. It pays to look for the trade-mark "Timken" on every bearing you install. **SEND FOR FREE BOOKLET: Timken Tapered Roller Bearings, Their Care and Maintenance.** Contains 20 pages of practical tips for mechanics, garage men and fleet operators. Write Dept. JC-10, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN
TRADE MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION

The Personnel Clerk was assisting a job applicant from the Tennessee Hill country in filling out his application for employment as a Grease Monkey. "Do you have any dependents?" the mountaineer was asked.

"No, I reckon as how I ain't got none," he replied.

"But you're married, aren't you?" the Personnel Clerk asked.

"Waal, I 'spect so," the applicant replied, "but she ain't dependable."

CCJ

Bartender: "Shall I fix you a Bromo-Seltzer?"

Inebriated Truck Mechanic: "Heck, no! The noise would kill me."

CCJ

Rate Clerk: "Lesh go home now."

Bill Clerk: "Naw, I'm afraid to go home—wife'll shmeell m' breath."

Rate Clerk: "Hol' your breath."

Bill Clerk: "Can't. Sh'too strong."

CCJ

TRAFFIC MANAGER: "CADDY, WHY DO YOU KEEP LOOKING AT YOUR WATCH?"

CADDY: "WATCH, THE DEVIL, SIR; THIS IS A COMPASS."

CCJ

Traffic Cop: "Hey, you, slow down that truck. Haven't you got a governor on it?"

Driver: "Naw boss—the Governor is back at the Capitol. That's fertilizer you smells."

CCJ

First City Driver: "You don't look so good old man. What's the trouble?"

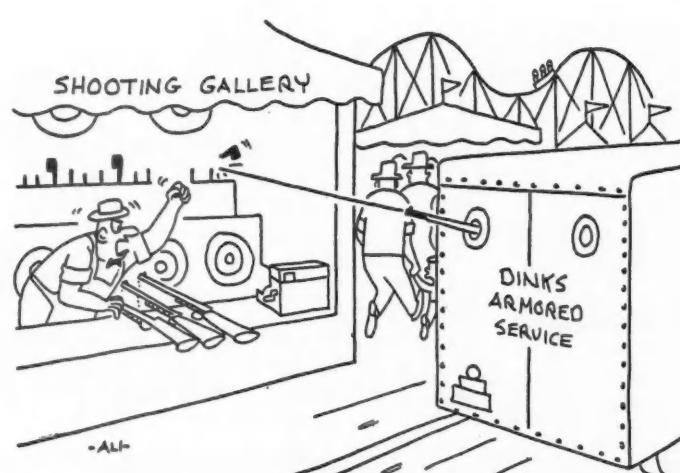
Second Ditto: "I got domestic trouble."

First City Driver: "But, Harry, you always said your wife was a pearl."

Second Ditto: "Yeah, that she is. It's the mother-of-pearl that makes the trouble."

CCJ

Advertisement: "Class One Motor Carrier has opening for a driver to haul dynamite. Applicant must be willing to travel."



LAUGH IT OFF

THE NUMBER OF TIMES THE AVERAGE TRUCK DRIVER SAYS "NO" TO TEMPTATION IS ONCE WEEKLY.

CCJ

Temperance Worker: "My good man, don't you know you'll never get anywhere if you continue to drink like that?"

Grease Monkey: "By cracky—yer right, lady! Come to think about it, I've started home five times tonight already."

CCJ

Traffic Cop: "Hey you, didn't you hear me whistle?"

Sweet Young Thing: "Yes, darling, but you're wasting your time. I'm already engaged."

CCJ

WEAVIN' WILLIE, OUR CITY DRIVER, SAYS THERE ARE TWO CLASSES OF PEDESTRIANS: THE QUICK AND THE DEAD.

Rambling Rex, the gypsy trucker, says: Another way to lose control of your rig is to default on one of your monthly payments.

CCJ

Garage Operator: "Darling, I have bad news. Today my shop burned to the ground. I hadn't a penny of insurance. I've lost all my money and don't have a dollar to my name."

Current Sweetie: "That won't make any difference dear. I'll love you just as much—even if I never see you again!"

CCJ

The head of the local bus company called in his new driver. "You drove a bus all day to-day," he stormed, "and didn't have one single passenger. What happened?"

The driver shrugged indifferently. "I just didn't have any passengers that's all."

"You mean to say no one waved at you?"

"Oh, sure," replied the driver, "people waved at me at every corner, but I wouldn't stop for any of them. Why should I? They didn't notice me when I was out of work."

CCJ

Warehouse Foreman: "I'm glad to see that you are arriving on time these days, Johnson."

Freight Handler: "Yes sir. It's quite easy now that I have bought a parrot."

Warehouse Foreman: "A parrot? What on earth for? I thought you were going to buy an alarm clock."

Freight Handler: "Well, I did buy the clock. But after three days, I got used to it and it didn't waken me. Now when I go to bed I set the clock on top of the parrot's cage. What the bird says when the alarm goes off would waken anyone!"

(Resume Work)

MORE

MORE MILEAGE

A radical new advance in tire design and construction (load-molded carcass) makes possible more mileage at sharply reduced costs. But mileage isn't everything. If you have off-the-road pickups or just plain bad roads you need . . .

MORE TRACTION

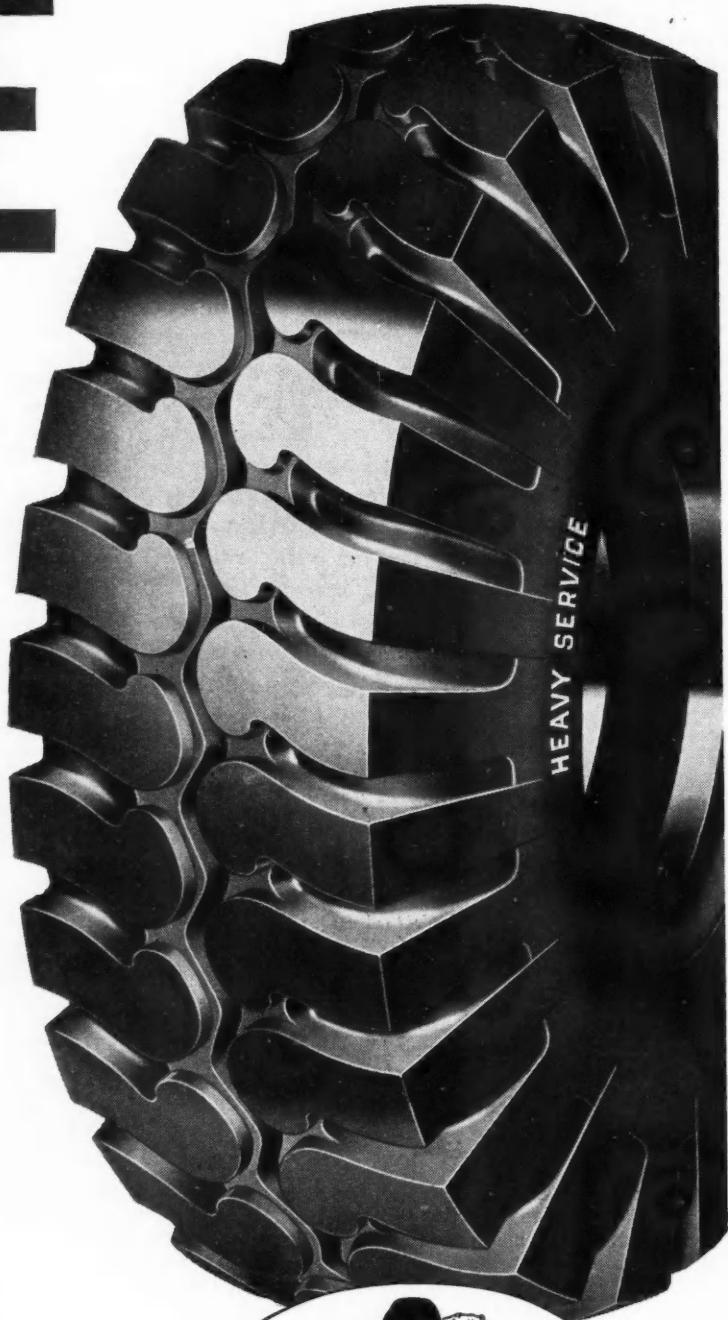
And now you can get it in a highway tire! The new GILLETTE SUPER TRACTION is designed to give you deep, firm traction in rough going. Another amazing plus feature in this great new truck tire is . . .

MORE SKID RESISTANCE

You get 150% greater skid depth without a stone retention problem! If you've been looking for a perfect combination of safety, performance and mileage — either on or off the road — look no further . . . get . . .

THE NEW DOUBLE-DUTY **GILLETTE** SUPER TRACTION

WEAR BETTER BECAUSE THEY ARE BUILT BETTER!



8,000,000 Trucks Ready to Beat World War II Record

JUST ONE SHORT DECADE ago, this nation was arming for war. Now, we are in the beginnings of a similar re-arming which is intended first to prevent the recurrence of a world-wide conflict and, second, to carry the United States and its allies to victory if our peace efforts fail.

What this will mean to the trucking industry involves at this point a great deal of speculation, but there are many things of which we are sure and which point the way for us with reasonable clarity.

New Truck Supply Good

THE most important single consideration, in my opinion, is this: what are the trucking industry's prospects for obtaining new equipment in the event of full-scale mobilization of our industries for war production.

I believe the outlook in this respect is good. Although we naturally could not expect as much new equipment as we would like, we can expect much more than our Government was able to funnel through to us during World War II. The American Trucking Associations has been working for many months with the National Security Resources Board to make sure that truck transportation receives the proper consideration in the event of tightened restrictions.

John V. Lawrence, managing director of ATA, has been sitting in with subcommittees surveying the whole transportation and economic picture, and ATA has supplied a vast amount of information on equipment, tires, fuel and manpower. I know

(TURN TO PAGE 176, PLEASE)



By Ted V. Rodgers

Honorary Chairman of the Board of Directors
American Trucking Associations, Inc.

"Our most potent weapons then (World War II) were not secret weapons; they were mass production and the greatest transportation system the world has ever known. At that time, with a total fleet of some 4,850,000 vehicles, the trucking industry was hauling about one-fourth as many ton-miles of freight at the railroads . . .

"Today, our truck fleet totals approximately 8,000,000 vehicles . . . Many of the prewar trucks have been replaced so that the fleet now is in top-flight condition to meet any demands upon it. What we accomplished between 1942 and 1946, we can do again—and better. With far more experience and with more and better equipment, we are ready to beat the records of transportation that we established then."



New West Branch garage opened in June, 1949. General offices are located in front. Garage and shop doors are shown on the side



ABOVE. Fuel island with canopy, located on South side of the building, is equipped with two pumps. First large door is repair area entrance

Storage and shop are under one roof, but flow of storage traffic does not tangle with maintenance.

Shop replaces two, permitting better control

OPENED IN JUNE, 1949, our new West Branch garage replaces two others, located in Greenfield and Dearborn, and gives us maintenance control of 111 retail delivery and service units at greatly increased economy of operation. We do body work, all running repairs and will do painting soon. Formerly much of this work had to be sent to our main Gibson Street garage, a costly, bothersome and time-consuming process.

General offices occupy the front part of the new building. But the better than two-thirds remaining area constitutes the garage proper, which is segregated into a storage area and repair area, with the former much larger.

No Traffic in Work Area

THE chief feature of the over-all plan is the clear floor space that has been allotted for all truck movement, which in no manner interferes with work being done in the various departments. Also, vehicles can move from storage to mechanical repair, to washrack, the grease hoist, paint shop and woodshop without going outside at all. Neither man nor vehicle is exposed to the elements.

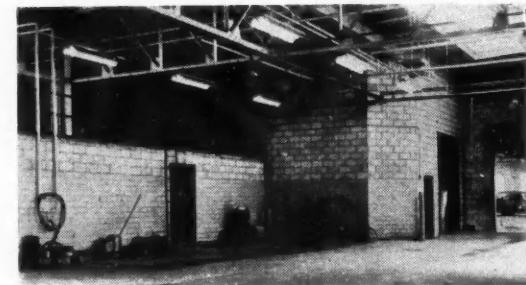
A wall, pierced by a huge doorway, separates the storage area from the

repair area. But whether a vehicle is leaving one area to enter the other, or merely maneuvering in either area, there is little to interfere with its free movement.

The garage runs east and west. Entrance to the repair area is made through a large 15 ft. wide by 12 ft. high electrically operated door. Directly opposite is an exit door of the same size.

Another huge door at the west, or far end of the garage, permits vehicles to enter the storage area from the yard. Incidentally, the new garage is located in the suburbs where

BELOW. Washrack is located in bay formed by the inner wall of the locker rooms and side wall of the body repair shop. Note tiled side-walls



Dairy's Branch

By R. A. Fitzgerald

Garage Superintendent

Detroit Creamery, Detroit, Mich.

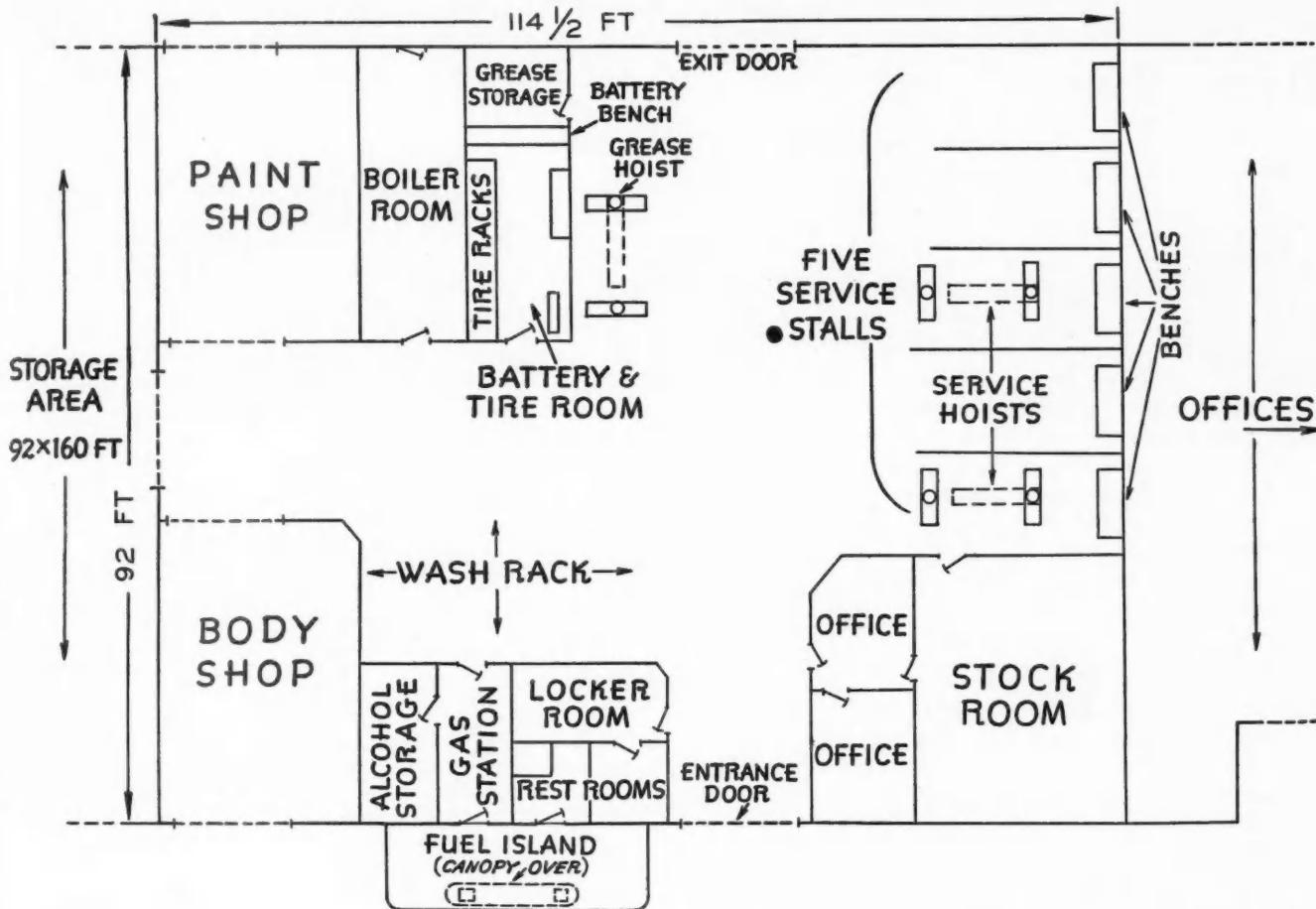
and Carl Hartwig

Foreman

there is little traffic, and there are no other buildings in the near vicinity.

Running around the repair area, clockwise, the following departments are found. To the immediate left of the entrance door are the lockers and washrooms and behind this, to the west, is the body repair shop. Between the body shop and the locker rooms and toilets is found a gas station and an alcohol storage room. Admittance to the latter is gained only from the outside and it is separated from the gas station by a fire-proof door.

A little bay is formed by the inner



Garage Provides Unity Without Interference

Layout of service area of new garage. Office (right) and storage area (left) are not included. Storage area has separate doors in addition to connecting door with shop area. Trucks to be washed can enter service area door, proceed to wash rack and then continue to storage area without interfering with any departmental work

Wooden bumpers set into the floor at the rear of parking areas, prevent trucks from hitting walls

wall of the locker rooms and the side wall of the body repair shop where we have located the washrake. These walls are tiled. Immediately across from these rooms, across the passageway admitting to the storage area, is found the paint shop. Adjacent to this is the boiler room, with oil-fired boiler. There are two large hot-water tanks; one supplying hot water to the heaters suspended from the ceiling framework, the other supplying hot water to the water system.

Next to the boiler room is the walled-off tire storage and battery-charging room, and back of this the

grease storage room. In the open, next to these rooms, is the grease-rack hoist; a two-post hoist with each post working independently if so desired. Here, too, oil is drained from the vehicles. This is caught in suitable containers, and dumped down a drain leading to a 500-gal. storage tank located outside next to the north wall of the garage.

The grease storage room, in charge of the grease man, is equipped with a battery-charging Lench and necessary tools. We have two battery chargers of the slow-speed type.

(TURN TO PAGE 54, PLEASE)



Dairy's Branch Garage . . .

Continued from Page 53

The rear, or north, wall of the repair area contains no special equipment apart from the 25-ton hydraulic press.

The major portion of the east wall, separating the repair area from the general offices up front, is occupied by five repair bays, stockroom and the garage superintendent's offices. The feature of this repair area is that all of the center floor area is left clear for vehicle movement.

No Criss-Cross Traffic

THREE are several features worth mentioning in most of these varied departments which, we believe, leads to better and more economical operation. In the first place, vehicles entering the repair area merely have to make an easily accomplished left turn to reach the washrake. On the other hand, vehicles entering from the storage area reach this rack just as easily by making a partial right turn.

The washrake is commodious and is equipped with two long drains set in the cement floor so positioned that water can drain simultaneously from both tractor and trailer at the same time and be carried away. The rear drain is situated in the center of the floor. The second drain is some six or eight feet away to the right of the main drain, and runs considerably to the rear. These drains are staggered in this manner because, when the rack is occupied by a tractor-trailer, they do not stand in a direct line behind one another but are rather oblique to one another.

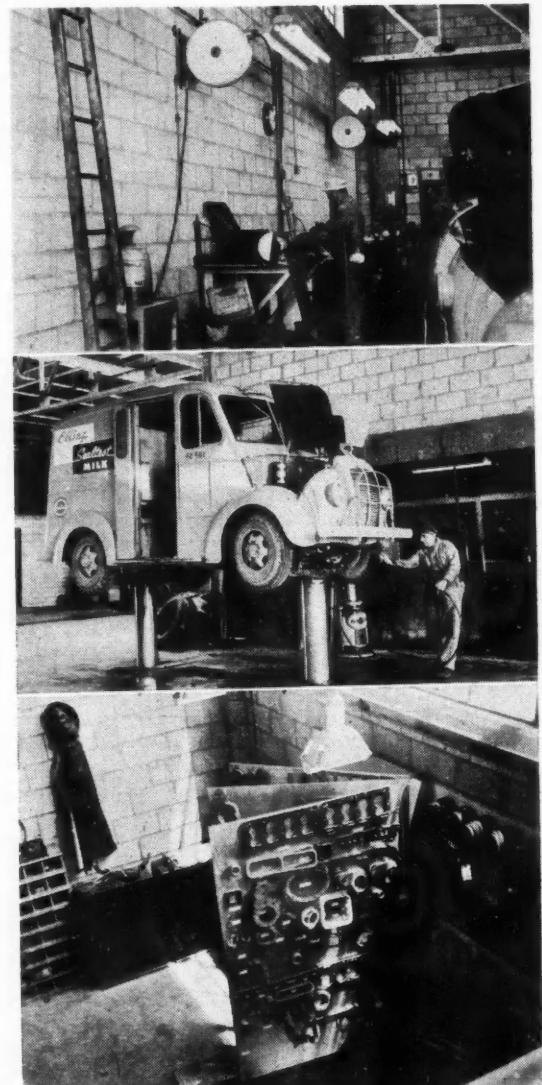
Floors in this area, as well as almost all other flooring throughout the entire garage, is slanted and drains provided so that slush and water will drain away and not remain on the floor.

For instance, the flooring in the storage area is slanted and a long drain provided. Floors are also slightly slanted in front of the repair bays. Another drain provided there too.

Mechanics' benches in repair bay are made of heavy channel, topped by thick sheet steel. Three overhead reels store compressed air utility hose

Truck on hoist being greased. Tire room adjacent to hoist is convenient for inspection, removal and installation of tires during greasing and PM inspection

Gaskets mounted on swinging boards facilitate storage of these parts. Each board contains gaskets for one make of truck



Five Repair Bays

THE actual repair area contains five repair bays and five mechanics' benches. These benches are unusually sturdy, being built of heavy channel steel and topped by a thick sheet of armor plate. The benches are held securely in place by 15-in. bolts running through the east wall and clinched on the far side.

Overhead are found three reels, holding compressed air hose and within easy reach of all mechanics for the cleaning of parts. Two containers holding cleaning fluid are used here for cleaning carburetors and other greasy parts. Immediately to the right rear of the bench line is the stockroom. Mechanics have only to move a few feet down the bench line to obtain necessary parts. The

stockman hands out the needed parts through a small doorway.

The stockroom is binned off, as are most stockrooms. But since our fleet is composed mostly of Fords, Dodges and Divco's, with the occasional odd truck, all stock in the bins has been segregated according to make for easy accessibility.

A very handy and compact feature of the stockroom are the boards holding and displaying gaskets and similar parts. These are mounted on five or six separate boards which swing open in the same manner as the pages of a book. Here, again, these items are segregated according to make.

Along three sides of the stockroom runs a railed-off balcony which is

(TURN TO PAGE 100, PLEASE)

Bus Men Mobilize for Wartime Operation

THE TWO NATIONAL associations of bus operators sounded a call for preparedness for keeping passenger transportation vehicles operating efficiently under limited and full-scale wartime conditions at two annual meetings held just a few days apart in Chicago. NAMBO, the National Association of Motor Bus Operators, held its 21st annual meeting September 13 to 15 inclusive, at the Drake Hotel. ATA, the American Transit Association, held its Emergency Executive Conference and Business Meeting September 18 to 19 at Hotel Stevens.

The highlights of both meetings were the wartime mobilization panels at which the passenger transportation industry took stock of its equipment, manpower and general resources—existing and potential. Present and possible future problems were examined in the light of World War II experience.

While no definite, self-imposed codes, procedures or final programs resulted from either meeting, representatives of both the intercity and local transit properties received what amounted to refresher courses in wartime passenger transportation problems. Many World War II controls were discussed, providing a clearer picture of what should be done and what may happen if present emergency conditions should continue indefinitely or if the Korean situation develops into World War III.

NAMBO Mobilization Forum

AT THE Drake Hotel, the National Association of Motor Bus Operators discussed four aspects of the passenger transportation industry's mobilization for wartime operation—rubber, manpower, fuel and lubricants, equipment and repair parts.

RUBBER—Robert S. Wilson, vice president, Goodyear Tire and Rubber Co. and first speaker on the Mobilization Forum, sounded the first serious warning of impending material shortages. "There is no use deceiving ourselves," he said, "there is going to be a shortage of rubber products during the balance of 1950."

That warning, however, was tempered by this promise: "Let me assure you that your essential rubber needs are in no danger. We will have tires

for you when and where you need them."

Commenting on the government's efforts to build an adequate stockpile of new rubber, Wilson said that natural rubber use is cut 35 per cent. There is no cut in the use of new synthetic rubber. Because some of the demand for new rubber is being filled by the synthetic product, the net result is a 20 per cent cut of the total new rubber supply.

"The total amount of new rubber available to industry after the cut back," he said, "is 90,000 tons per month, which is slightly better than the average amount of new rubber chewed up by industry each month during 1949.

"It might be inferred the consumer isn't going to be so bad off after all, because certainly there was enough rubber to go around in 1949. However," he continued, "the tempo of industry has been stepping up since the beginning of 1950, and then came the Korean crisis, with a resultant increased demand for all kinds of rubber products.

Reviewing the various production and distribution controls, Wilson said, "I don't think that consumer rationing with its attendant Bureaus and red tape is as yet necessary. Sensible and simple controls on production will take care of present problems of unnecessary consumption.

"And we had better be doing some intelligent thinking about gasoline rationing. Let's not bungle that one when the time comes. You will recall that, in World War II, tire rationing was imposed many months ahead of gasoline rationing . . . putting the cart before the horse. It wasn't smart and it wasn't effective. The error should not be repeated if the point of acute need is reached again."

Wilson also commented on the 35-mile speed limit in effect during the last war, which was intended to conserve tires. Not only did it fail to

NAMBO, ATA meet in Chicago for "refresher"

All properties urged to take immediate action on wartime operation procedures and problems.

achieve its objectives, it actually caused many hardships. "This time," said Wilson, "we want our national effort in high gear."

MANPOWER—R. A. L. Bogan, executive vice president, Greyhound Corp., approached wartime manpower problems with a reminder that during the peak transportation year of World War II, the industry carried more people than were carried by the railroads and in the event of an all-out war that peak level might be equalled at the very outset. "In addition to this task," he said, it is important to keep in mind a further prospective assignment of the bus industry which would be of unpredictable proportions—that of assisting in evacuation of cities, if such action became necessary.

Reviewing World War II manpower problems, Bogan said, "We all remember the great difficulties resulting from the ill-advised application of the 35-mile speed limit during World War II. It complicated our problems with respect to fuel, tires, and manpower. In order to comply, we had to hire an extra driver for every three on the pay roll, for all practical purposes.

In discussing the type of essential personnel required to operate an intercity property Bogan said, "There is a central core of the intercity bus labor force that is made up largely of specialists whose continued availability is absolutely essential to the industry's operation. I refer to personnel comprising about one-fifth of the total employment. They include officials, supervisors, and mechanics, whose jobs are not only essential, but require periods of specialized training averaging four years or more.

"More than half the labor force of the bus lines consists of drivers—and here some careful, realistic thinking is needed. First, we know that, while a comparatively brief period might be required to train a local bus driver, a

(TURN TO PAGE 194, PLEASE)

Bonus Boosts Buses' Failure-Free Mileage Goal

By Randall R. Howard
Special CCJ Correspondent



Reported by: READER NAME Report Mode		United Motor Coach Co. Inspection Sheet			Coach Date Inspected Date Imp.	
Gen. Imp. Name		Gen. Av.	Oil Av.	Clean Motor		
ITEMS TO CHECK		ITEMS TO CHECK				
BRAKES		BODY INTERIOR AND EXTERIOR				
		Brake	Unusual	Brake	Unusual	OPERATOR'S SEAT
		Grab	Brake For Proper Operation	Grab	Unusual	SEATS AND BACKRESTS
		Tight	Brake For Proper Operation	Tight	Unusual	STEERING WHEEL AND DASH RAILS
		Wavy	Brake For Proper Operation	Wavy	Unusual	Check for Protruding Screens
			Check Seal on First Aid Kit and Flag & Flares Kit			Steer. Wheel
			Master Motors For Running Condition			Power Steering Motors and Belts
		No. Power				Operate Emergency Door
		Mounts				Turn Lever, Turn Wheel, Operating Doors
		Mounts				Handle Lever and Connections
				Water Leaks (Inlet and Piping)		
				WINDOWS		
				Check for Suctions and Ratches		
				Front, Side and Pillars		
				Windshields and Front		
				Front and Rear		
				Rear Panels		
				Indicators and Directional Signals		
				General Appearance and Condition of Paint		
ENGINE		FROM OPERATOR'S SEAT				
			Check Shift Lever			DRIVING WHEEL
			Push on Shift Lever For Defects			Check Wheel
						Clutch Pedal for Clearance
			Oil Gauge For Pressure			W. S. Wheel for Arch Travel and Clear Wheel
						Brake Lever for Travel (AM, 4.4 Notches)
			Push			Switches (Side Seats)
						Push on Throttle
CLUTCH		ENGINE COMPARTMENT				
			Check Oil Pump Screen			CHASSIS MAVING AND CONNECTIONS
			Change Oil and Grease and Change Filter Cartridges			Starter Thread—O.D.
			Check Air Cleaner and Refill S. & E. 16 Oil			Gen. Regulator—Therm. Reg. Setting
			Water Leaks, Hoses, Exhaust and Condition			Emergency Stop Switch
			Brake Lines, Hoses, Exhaust and Condition			Brake Pedal Position Switch
			Trans. Oil Level and Condition			Ex. Oil in Transmission, SAE No. 20
			Trans. Oil Level and Condition			Hyd. Clutch Air Cylinder
						Check Generator, Motor, Clutch
						Check Generator, Motor, Clutch
STEER.						
			Brake Pedal Condition and Tightness			Hyd. Drive, Direct Drive, Axle Drives
			Clutch Pedal Condition and Adjustment			Hyd. Trans. Fluid Lines and Coolers
			Wipers			Tighten Exhaust, Manifold, Muffler
			Engines, Fuel Pump and Fuel Filter Operating			Pipes, Fittings and Tail Pipe
			Brake Fluid Pressure (10 to 15 lbs. 25.40 Top)			
			Check Throttle Timing and Governor Setting			
			Check Valves			
DOORS						
			Check Engine Idle (120-150 RPM)			
			Check Engine Idle (120-150 RPM)			
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BODY						
			Check Engine Idle (120-150 RPM)			
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FIG. 1. Outstanding feature of these newly adopted maintenance forms is the "Reports" column on the left side. This column provides a check list of 49 possible repeat items. When new TM form is marked for scheduled bus inspection, previous inspection forms are inspected and any repeat items are marked for the attention of inspector for possible replacement in lieu of another adjustment or minor repair.

▲ **EARLY IN 1950**, the management of United Motor Coach Co.—which operates 50 buses, mostly on a 21-mile run between its headquarters shop in Des Plaines, Ill., and the crowded Chicago Loop—began a new program to improve bus maintenance.

During the previous year, the equipment had been having what was then called a "road failure" on an average of every 6000 miles. Within six months the mileage between operating failures was increased to nearly 7000 miles. Now General Manager Leonard E. Manual confidently expects that the interval will be extended to at least 10,000 miles.

Following are the chief steps taken by United Motor Coach to improve its bus maintenance methods:

1. New company definition for a "road failure."
2. Interesting all shop workers in



FIG. 3. ABOVE. Committee which meets to determine whether an operation failure is chargeable to the shop. Left to right: Harry Janus, night supervisor; Harry Von Bergen, assistant shop superintendent; Elmer Freitag, purchasing agent; Harry Carroll, General Motors service representative; Noah Thomas, driver supervisor. Elmer Freitag was appointed in the absence of John Klein, shop superintendent, who is vacationing in the state parks of the West. **FIG. 4. LEFT.** Tire damaged beyond repair is displayed for benefit of drivers and maintenance men. Attached card states cause and resultant cost of damage



Making certain that United Motor Coach's buses have minimum mechanical troubles is going to net each shop man a cash bonus

better overall maintenance.

3. Cash bonus incentive, shared by all shop personnel.
4. Bus driver coordination in failures-control program.
5. Changes in shop inspection methods and records.
6. Tracing failures to poor-quality parts as well as poor-quality maintenance.

New Franchise Boosts Business

After having been in operation for more than 50 years, the most pronounced jump in United's passenger-mileage volume has come during the past few years; following the extension of its operating franchise on from the edge of Chicago into the crowded central Loop. This soon doubled the traffic volume, from $2\frac{1}{2}$ million passengers, for 1948, up to more than $5\frac{1}{2}$ million, for 1949. To

handle this increased volume, this property now has in operation 24 comparatively new diesel 4- and 6-cylinder buses for 32 to 40 passengers; and 24 older gas-jobs for 21 to 36 passengers.

Servicing of this equipment is handled almost exclusively at Des Plaines—headquarters for a total of about 100 operating and maintenance personnel, which includes 61 drivers, 25 shop mechanics and supervisors, and additional road patrol and office workers. The headquarters building is comparatively new. It measures 125 x 175 ft, with a high cantilever roof, blower heat and fluorescent lighting. At the front is the administrative office, and a part of the middle section is utilized for an equipment paint shop.

The maintenance shop at the rear is not elaborate, as shown in Fig. 2.

All tire repairing, heavy machine work, welding and electrical work is sent out, but there are adequate facilities for daily servicing, repairs, unit replacements, and periodic inspections and overhaul. Servicing features include three 25-ft inspection and greasing pits, and benches for use of tools. Additional shop equipment includes two engine stands, two engine dollies and wheel aligner.

"Road Failures" Reduced

One of United's first procedures, in starting its new servicing program, was the development of a general understanding among all shop personnel that they should discontinue use of the old "road failure" term, as too narrow and not properly descriptive of any failure for which the shop might have been responsible.

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Accident-Prone Shops

Need Attention Too

MUCH HAS been written lately on the subject of accident-prone drivers. Fleets have gone to great length to eliminate this type of employee through selection and training. However, little has been said of the accident-prone *mechanic*, the accident-prone *work area* or the accident-prone *shop*. Yet here is another cause of needless waste in man-hours, health and money. Progressive fleets are studying the causes of shop accidents and taking steps to improve safety, but much remains to be done in shop clean up, in mechanic training, in safety education.



A recent study of representative fleet shops reveals the startling facts that there were as many as 358 accidents listed in one year with organizations employing 702 mechanics—an accident for each 1.9 worker. Over 24 per cent of these accidents resulted in lost time, averaging 12.7 days per accident. Without considering the human misery involved for the present—what a price we pay for carelessness.

A review of the distribution of these accidents (since they are typical) is probably the first approach in studying remedial measures. Accidents in repairing vehicles accounted for around 27 per cent of the total, while damage to eyes resulted in 12 per cent of the reported accidents. Moving or lifting objects took 8 per cent of the toll, and injuries from falling

objects caused another 8 per cent. Slipping and falling resulted in 6 per cent, while another 6 per cent occurred during tire repair. Burns accounted for 4 per cent; handling shop equipment took a 4 per cent toll. Other casualties were listed as: operating shop equipment, hit by vehicle, hurt through jumping, struck by hand truck. It is apparent that a big percentage of this waste could have been eliminated through safety campaigns, training courses, better inspection of work areas, closer supervision of the work, and improved working facilities.

Power Tools & Equipment

POWER hand tools and power machinery are high on the list of causes of shop accidents. By far the greatest percentage of casualties arises from foreign material entering the eyes, especially with the use of grinders, sanders, polishers. In a recent report foreign bodies in the eye accounted for 31.6 per cent of all shop accidents. Use of goggles would cut this figure appreciably. Goggles should be required for grinding, chipping and metal finishing operations, as well as when working under vehicles.

It is not enough to ask employees to observe this precaution. Goggles should be provided, should be placed in convenient locations and should be kept in good condition so that they can be used effectively. A smudged or cracked pair of goggles may even cause accidents.

While no figures on falling into power machinery are available at present, it is a prominent cause of damaged fingers and feet, contributing to a high loss of time and medical expenses. Safety signs and warnings placed at dangerous machinery



may help a great deal, but other steps must be supplemented. Machines must have adequate guards, safety shut-off switches, convenient means of fire control. They should be adequately lighted as poor visibility is responsible for a great many acci-

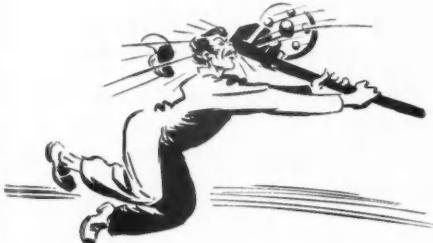
dents. Not only should the work be well illuminated, but the area itself must be adequately lighted. Research has disclosed that use of colors promote safety in such spots as this. Use of colors in offsetting fatigue and accidents resulting from strained or fatigued workers has been used successfully in many shops.

Another danger around power equipment is electrical shocks from poorly insulated wiring or improperly grounded tools. Power hand tools such as electric drills, saws or hammers are equipped with three wires, one of which is to be grounded to a water pipe or other good ground. This will insure the operator against shocks in case the tool develops a short. This practice is especially necessary when working around moisture or abrasive-ridden air. Electric-powered shop equipment should be inspected regularly for proper insulation of wires and good grounds. Mechanics should be especially cautious when working around wet floors as a poor connection may inflict a severe shock.



Hand Tools

HAND tools come in for their share of contributing causes of shop accidents. This is especially true of cold chisels, when mechanics fail to care for the tool properly. Chisels should be kept sharp, should have round, smooth head free of battered metal and should be kept clean. Many times a lick with a hard-headed hammer will dislocate metal and send it



flying. It is imperative that blows be driven away from the worker, that other shop sections be guarded with adequate screening.

Danger from mashing the hands with a hammer will be cut appreciably if tools are kept clean, if handles are kept tight in hammers, and hammer heads are kept in good repair. Use of the proper size punch, chisel, drift or cutting tool will reduce accident hazards.

Screwdrivers used as prybars take their toll of accidents when inadvertent mechanics exert too much pressure on the tool—or when the tool slips and cracks knuckles. Prybars should be used carefully, for slippage usually results in an accident. When prying, the mechanic should pull toward himself rather than push, a practice saving knuckles.

Accidents caused by wrenches—socket, adjustable or box end—arise through incorrect usage of the tools. Improper fitting of the wrench is probably the chief offense. Torque should be transmitted to the wrench toward the mechanic—not away from him, as pulling results in better contact with the work as well as safer application.

More accidents result from falling over scattered tools than accident reports indicate. When tools are left strung about the shop floor, mechanics are asking for an accident.

Painting & Welding

WELDING equipment is not dangerous—if used correctly—and when accidents arise from the welding shop, in many cases it could have been averted. Damage to the eyes arises from flying sparks, bits of metal or from the glare of the torch. Goggles and protecting face guards must be used when doing this work.

The paint shop produces unnecessary accidents when shop rules are not observed. Respirators must be worn when using the spray gun, as the mist from the nozzle is injurious to the lungs and nasal passages. Fire hazards are always prevalent so extra precaution should be taken against smoking.

Cleaning

GREASE pits appear to be the most dangerous spots in actual repairing of vehicles—and surprisingly enough, most of the accidents are unnecessary. Slipping and falling take the largest toll. In many cases this is simply the result of poor housekeeping, when greasy floors, steps or equipment cultivate casualties. Pits

should be painted in a light color, should be kept spotless as practicality permits, and should be well lighted to offset such dangers. While rails are impossible in many shop setups, it is recommended that rub rails, guards or adequate protection be arranged for.

Jacks, hoists and lifts bring about accidents when not used properly. When work is raised, it must be blocked adequately and precautions taken that it is not lowered inadvertently while a man is beneath it. Parts swung from a hoist may cause accidents when unwary mechanics



walk into them. Such equipment should be inspected regularly as a precaution against defective chains or mechanisms. Extended jack handles often offer tripping hazards too.

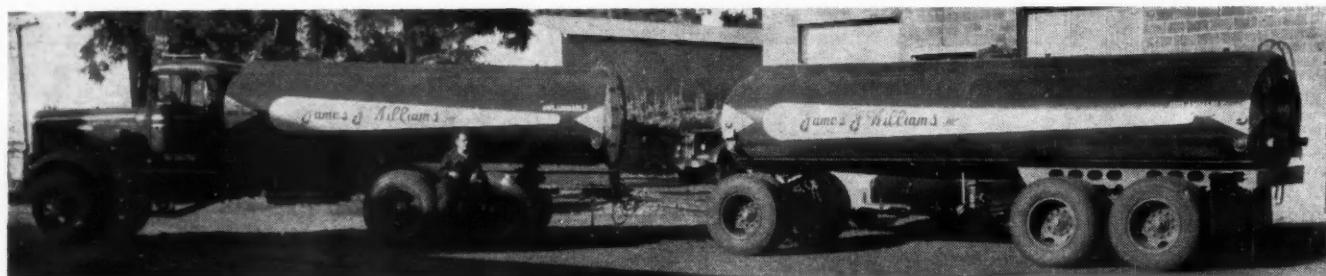
Slipping & Falling

SLIPPING and falling are one of main causes of shop accidents in the trucking industry, accounting for as much as 11 per cent of the casualties according to one study. While many of these accidents occur at the dock or terminal, a good percentage do arise in the shop, when mechanics run to make up time, rush for the wash room at the 5 o'clock whistle or simply stumble over an untidy shop floor.



Greasy floors account for many accidents of this type. A thin layer of grease or oil on a floor makes it as dangerous as that much ice, especially when men are expected to carry heavy burdens over it. It should be the rule of the shop that spilled oil

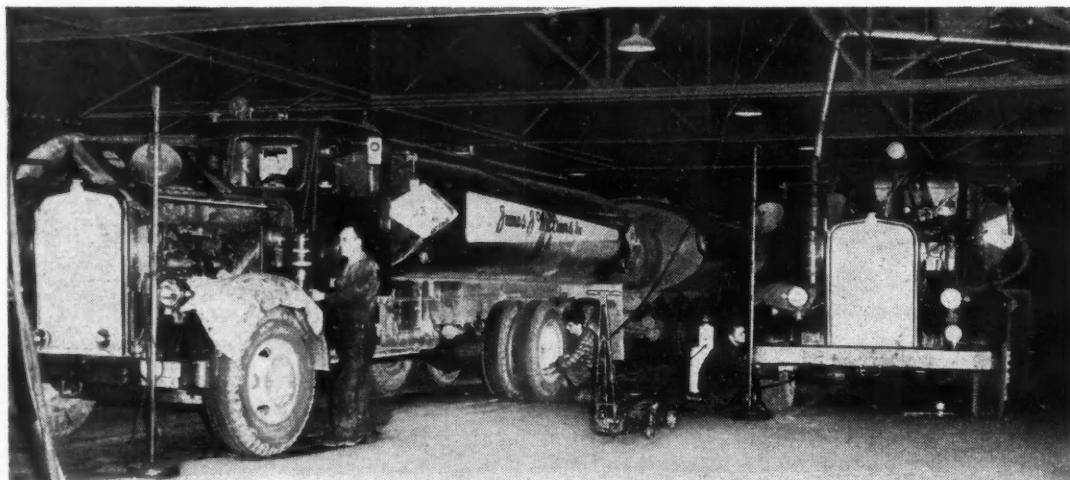
(TURN TO PAGE 168, PLEASE)



Here is one of Williams' truck-trailer combinations as it left the service lane. It will not return for 1500 miles

Through-Lane PM Cuts

All PM work is handled on 120-ft double service lane. Average time for 1500-mile check is 1½ hours per combination



Three 1500-mile checks comprise a 4500-mile PM cycle that cut road calls and nets

AFTER THREE YEARS' experience with assembly line, through-lane PM service, built around 4500-mile cycles, we are convinced that we are saving at least 25 per cent on our maintenance cost, compared with that of previous methods.

Our terminal shop here at Spokane, Wash., is a fireproof concrete building 76x120 ft. A two-lane service driveway runs the length of the building, with a two-lane turnoff half way back, where units can be sidetracked for major repair, or taken through a side door to a paved parking lot, which is also 76x120 ft.

Our 4500-mile-cycle PM program starts at 1500 miles. Our 12 truck and trailer bulk petroleum carriers (10 diesels and 2 gas), all of the 36,000-lb. class, mark up a total of around 150,000 miles per month. This means about 144 PM checkups through the lane each 30 days.

First 1500-Mile Check

FOR this first 1500-mile check, which we call No. 1, we give a full lube job for truck and trailer, change oil and filter, wash, and steam clean, if necessary. We then complete what we call our seven points.

1. Tires are checked. If they show any sign of a break, they are removed, placed on a spreader and examined. All tires are checked for mating. Tire pressure is taken and recorded on a tire card, if tire shows unusually high or low pressure.

2. Brakes are checked and adjusted if necessary.

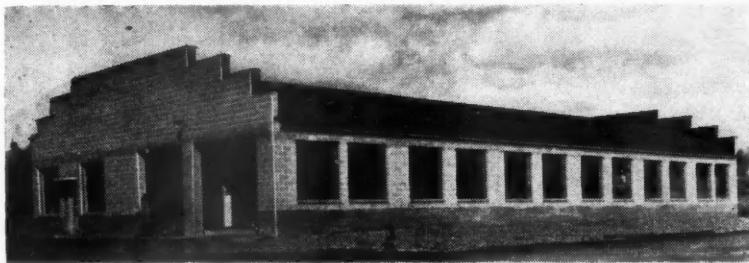
3. Battery is checked.

4. Lights are checked and connections examined.

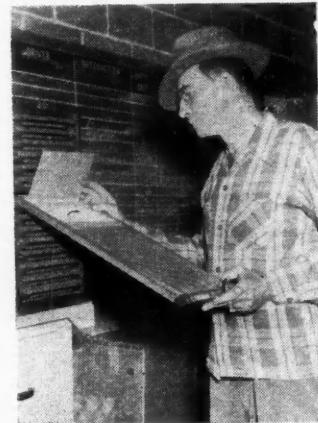
5. Transmission and differential are checked.

6. The air cleaner is checked.

7. A PM card is filled out show-



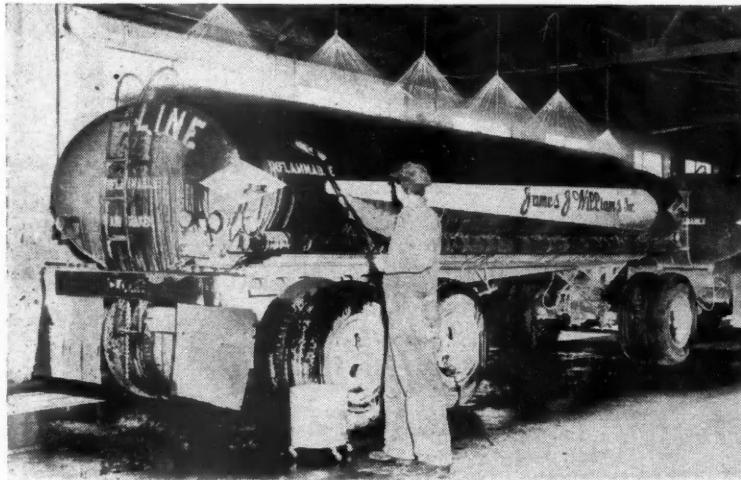
Williams' shop measures 76x120 ft, has same size paved lot on left



Maintenance Cost 25%

By Art Thomas
Superintendent of Maintenance
James J. Williams, Inc.,
Spokane, Wash.

While truck is being serviced, its trailer combination gets washed



200,000 miles from engines and transmissions

ing findings on each of the above "musts"; except No. 1, which goes on a tire card.

Second 1500-Mile Check

AT THE end of the second 1500 miles, the unit is given the same lube job, washed and the same check above, plus a check on:

1. Fuel screen.
2. Steering head.
3. Generator brushes.
4. Fifth wheel.
5. Check and lubricate generator, starter, fan, relay emergency valve.
6. On the two gas units we check

spark plugs and ignition points.

Third 1500-Mile Check

FOR the 4500-mile check, or the third 1500-mile check of the 4500-mile cycle, we follow the exact steps of No. 1.

Each 9000 miles, valves and injectors are checked and adjusted.

Each 15,000 miles transmissions and differentials are drained, filled with a flushing oil, given a 10-minute run, drained and refilled.

Also on the 15,000-mile date, we jack up each wheel and check wheel bearings for excess play. By doing

this we catch imminent bearing failures in the shop. In fact, in the 24 months during which we have been following this procedure, we have had but one bearing failure on the road.

Washed While Checked

ALL PM work is done on our 120-ft. double service lane. While the truck is being checked, an overhead hot water spray washer system is turned on the trailer. With this system, washing can be handled by one man with a long-handled brush in minimum time. While trailer is being checked, the truck is washed.

Work in the shop is handled by eight men in a staggered shift. Two mechanics and one helper come on at 8 a.m. and work until 4 p.m. One helper comes on at noon and works until 8 p.m. One mechanic and one helper come on at 4 p.m. and work until midnight, and two helpers come on at 7 p.m. and work until 3 p.m.

Our program has reduced road calls to an absolute minimum. We change engines and transmissions on an average of 200,000 miles but we have no major overhauls. We have three units out with well over a million miles on them.

In dollars and cents, our present PM program is costing us one fourth less than any other check and maintenance program which we have ever tried. By using exchange parts, which we rebuild in our own shop, we have cut down considerably on unit lay-up time.

Shop hints from FLEET

1. Valve Parts Case

by Ray Diefendorf
Dohrn Transfer Co.
Galesburg, Ill.

When Slo-Roto valves are disassembled, the caps should be saved in such a manner that the same cap is used on the same valve when replaced. But when extra cylinder heads are prepared and stocked, this is somewhat difficult. With this block assembly case I have made the job is simple.

This case is made from a block of wood 7 in. long, 1 in. wide and approximately $\frac{3}{4}$ in. deep. Six holes are drilled to a depth of $\frac{1}{2}$ in. and each is numbered as shown. The cover is made from a piece of strap iron bent to fit over the ends and drilled to take screw eyes which are used as locks. Thus caps may be kept in proper order, and the block can be wired to the reconditioned head until used.

2. Putty Dispenser

by Gordon E. Upperman
Continental Baking Co.
Wheeling, W. Va.

Make a key up as shown in the drawing and apply it to your body putty tubes. It will speed the work and make application easier. The key is made from a $\frac{1}{4}$ -in. welding rod, shaped as shown. It can be used over again, of course, when the putty has been exhausted.

3. Transmission Filler

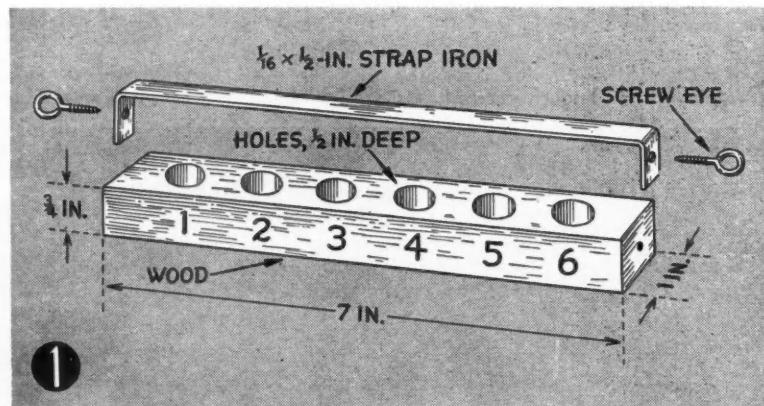
by C. B. Snead
Dixie Drive It Yourself
Atlanta, Ga.

Small pump grease guns usually make a mess when filling the trans-

mission or the rear end, and not all shops have high pressure types. Here is how we solved the problem.

I use an 18-gal air or water tank, cut a hole in the top and weld a 3-in. coupling with a pipe plug for a filler. Again in the top I drill a hole and fit a tire valve and an air pressure gage. At the bottom I mount a cut-off valve and a high pressure hose. This is fitted with a nozzle and hand-operated applicator.

The tank is mounted on two 4-in. wheels, and pipe handles are provided. The truck and handles can be either welded to the tank or clamped on with bands which encircle it as shown. This unit will hold 100 lb of grease with sufficient space for air pressure. The tank is pressurized to 35 lb per sq in., and the dispenser is ready to go. It will require two fillings of air to empty the tank, but it is much handier than many regular pressure systems I have seen.



4. Bearing Packer

by T. E. Bate
Omar Bakery
Muncie, Ind.

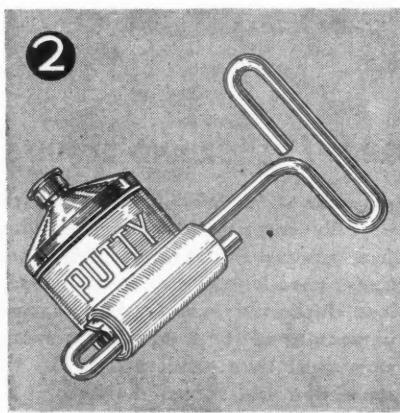
Here is a suggestion that should be of use in many fleet shops. This home-made bearing packer is made from odd parts lying around and does a good job.

The base is a 4-in. steel plate to which is welded a $\frac{1}{2}$ -in. pipe about 8 in. long. An old mirror back piece is then welded to the top of the pipe, and a $\frac{1}{4}$ -in. hole is drilled through it at the center. The upright is plugged about 2 in. from the top, a hole is drilled just below the mirror back, and a regular grease fitting is inserted. The cone used to fit over the bearing is made from sheet steel welded or riveted as shown. This packer is used just as any bearing packer when a pressure gun is applied through the grease fitting as shown in the diagram.

\$25 FOR THE BEST HINT PUBLISHED
EACH MONTH . . .

SHOPS

\$5 FOR ALL HINTS
PUBLISHED EACH MONTH



5. Card Holder

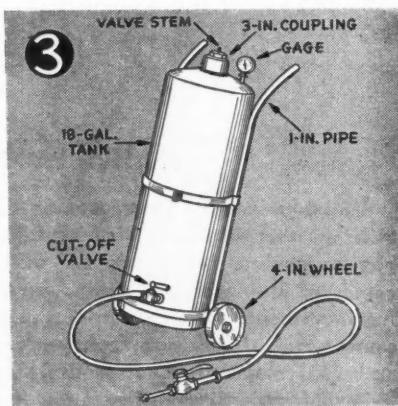
by John Pupchik
E. Oostdyk Motor Transportation
Clifton, N. J.

Here is a registration card holder which is water-proof and can be used either inside or outside of any cab or trailer. The holder is made from galvanized sheet steel, crimped and soldered for tight joints. Actually the holder consists of three pieces—the bracket, the base and the cover. Dimensions and construction details are given in the drawing.

6. Tape Holder

by Henry Joseph
Gardenville, Pa.

A few wraps of friction tape around the shank of the screwdriver will save a lot of time for the mechanic doing electrical work. The tape is always handy, and sufficient amount can be carried here for several jobs.



7. Sickle Grinding

by Tom Deyo
White Belt Dairy Garage
Miami, Fla.

I saw your recent shop hint showing an attachment for grinding sickles. Here is another way.

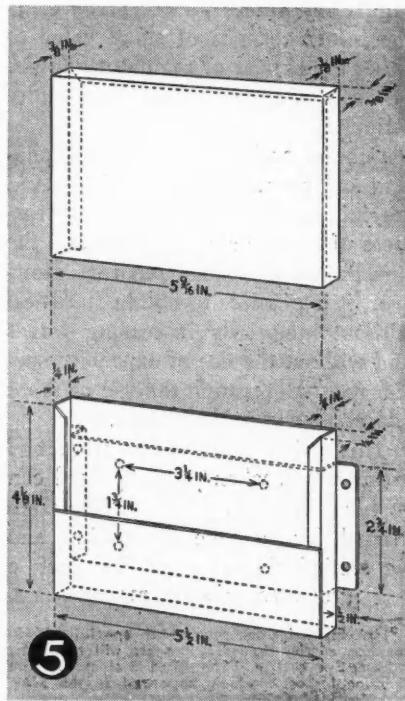
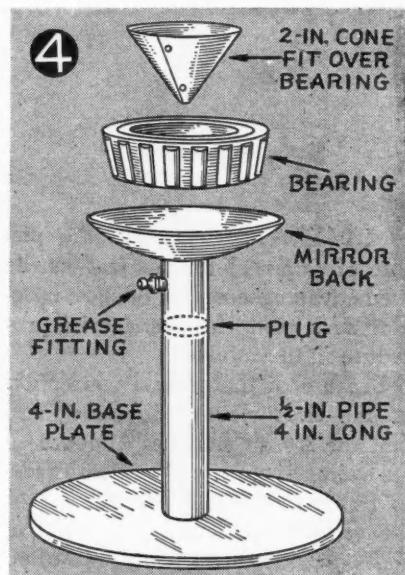
Mount the sickle knife bar in two vises and grind the sections with a portable body grinder.

8. Fuel Gage Unit Removal

by James L. Higby
Paul and Sons
Alva, Okla.

It is hard to get the fuel tank gage unit out of the 1950 L Series International Harvester trucks. Here is a quick way to do it.

With a 3 3/4 or 4-in. hole saw, saw through the floor of the cab directly over the tank unit. The unit can be removed for service without removing the gasoline tank. After it is replaced, make a plate to cover the hole and fasten it with screws.



Management Statistics

Made Easy for the Motor Carrier

Daily Revenue Report provides up-to-the-minute breakdown of income while Vehicle Mileage Record keeps tab of each vehicle.

Both forms are simplified for minimum paper-work time and cost

By John Essex*

STATISTICS represent the picture of past performance and can be used advantageously by the fleet operator as a guide for managerial procedure in the future.

Because of the general conception of the time element involved, and that the word "statistics" implies to the average person a gigantic obstacle to be overcome only by the use of the services of statisticians or special experts, management quite often confines preparation of statistical information to that actually required by regulatory bodies and in many cases the information is of small value to either the carrier or regulatory bodies because of inaccuracies and faulty estimates.

General belief is that the compilation and preparation of statistics and special reports would require the services of a large clerical force and the installation of special records. However, it is possible to obtain statistics, without materially increasing forces and without the use of expensive special records, through the use of more adaptable accounting forms.

This article contains two simplified forms which when properly used can supply virtually all information needed for revenue accounting and for statistical purposes. The first, a

(TURN TO PAGE 66, PLEASE)

*Mr. Essex is an accountant specializing in common carrier records. Readers will recall his informative article, "Simplified System Supplies Functional Cost," which appeared in the May, 1950, issue of CCJ.

DETAILED PROCEDURE FOR RECORDING REQUIRED

Initial procedure for recording details on this form (top of opposite page) involves separating of office copies of waybills into groups covering movements of freight from and to same terminal locations, column (1) and (2), respectively. It is designed to avoid recording information between the same points because the data developed for outbound freight from each terminal location can be of considerable value for obvious reasons. Each separated group of waybills should be processed fully to obtain all information required for report columns before proceeding with the next group.

Column (3), One-Way Mileage, represents the highway distance between the two terminals shown in columns (1) and (2). This mileage figure is constant, except in case of changes in highway routings and detours.

Columns (4) and (5), Number of Shipments Billed, separated between truckload and less than truckload develop information involving the number of volume shipments handled from each terminal from day to day. A truckload shipment is one shipment moving on a single bill of lading and having a billed weight of 10,000 lbs. or more. Any shipment having a weight of less than 10,000 lbs. is considered as a less than truckload shipment. Separation is essential because of the difference in per cwt. rates produced by each and to determine the extent of each class of traffic movement. To obtain this information it is necessary

to make a further separation of the waybills covering shipments handled from and to the same terminal locations, usually, the number of truckload shipments represents only a small percentage of the total and involves a very short time element to make the separation and record the data.

Columns (6) and (7), Weight in Pounds, separated between truckload and less than truckload. Weight includes only intercity movements of freight and does not include pickup and delivery or local service weight. Include weight shown on waybills only.

Columns (8) and (9), Ton Miles, truckload and less than truckload. Calculation of ton miles is quite simple. To obtain truckload ton-miles (column 8), merely multiply column (3) by column (6), then divide by 2000 for each terminal to terminal entry. To obtain less than truckload ton-miles (column 9) use same formula by multiplying column (3) by column (7) and dividing by 2000. The total of column (3) for all terminals for the day cannot be used for calculating ton-miles; must be calculated for each line entry. Ton-mile figures are beneficial for comparative purposes and to calculate average loads and average hauls (in miles). Divide ton-miles by total power unit vehicle miles operated in inter-city service to determine the average load. Divide ton-miles by total tons of intercity freight billed to determine average length of haul.

Columns (10) and (11), Intercity Freight Revenue, separated between

DAILY REVENUE REPORT											Date	19			
From - Terminal (1)	To - Terminal (2)	One-Way Mileage (3)	Number of Shipments Billed (4)	Weight-Pounds (5)	Ton Miles (6)	Ton Miles (7)	Ton Miles (8)	Ton Miles (9)	Ton Miles (10)	Ton Miles (11)	Credit Acct. 3100 Intercity Freight Revenue	Credit Acct. 3900 Other Operating Revenue (12)	Credit Acct. 2090 C.O.D.'s Unremitted (13)	Credit Acct. 2055 Interline Accounts Payable (14)	Debit Acct. 1120 Accounts Receivable (15)
Totals		XXXXX													
(a) Tons of Freight Handled over Platform _____ (b) Freight originated and Delivered by Reporting Carrier _____ (c) Freight Originated by Reporting Carrier and Delivered to Connecting Carrier _____ (d) Freight Received from Connecting Carrier and Delivered by Reporting Carrier _____ (e) Freight Received from Connecting Carrier and Delivered to Connecting Carrier _____ Total _____											lbs.	_____	_____	_____	100

DATA ON SIMPLIFIED "DAILY REVENUE REPORT" (REPRODUCED ABOVE)

truckload and less than truckload. Intercity Freight Revenue represents the carrier's proportion of freight charges and includes fees for handling C.O.D.'s. Most carriers have interline arrangements with other carriers and quite often the accounting for a collect shipment is confusing. For example: an interline collect shipment received from a connecting carrier must be collected and a part of the proceeds returned to the connecting line. In this case the delivering carrier reports as Revenue only that part of the freight charges accruing to his operation, the portion due the connecting carrier should be shown in column (14), which will be discussed later. The 3% Federal transportation tax should not be included on Daily Revenue Report but should be accounted for on Agents Cash Reports, when tax is collected.

Column (12), Other Revenue. Represents miscellaneous revenues incident to motor carrier operations, including storage of freight in excess of free time provided in tariffs.

Column (13), C.O.D.'s Unremitted. This column includes amounts of C.O.D.'s, the collection of which is the responsibility of the carrier. Do not include C.O.D. fees—they are to be included in column (10) or (11), as appropriate.

Column (14), Interline Accounts Payable. Include portions of freight charges which are due to connecting carriers. Involved are portions of freight charges on collect shipments received from connecting carrier and

delivered by reporting carrier, prepaid shipments originated by reporting carrier and delivered to connecting carrier, and either prepaid or collect shipments received from a connecting carrier and delivered to a connecting carrier, latter type merely moving overhead and neither originated nor terminated by reporting carrier.

Column (15), Accounts Receivable. This column represents amounts due from Agents, Customers, and Interline and the amount recorder should agree with the total of columns (10), (11), (12), (13), and (14).

Item (a), Tons of Freight Handled over Platform (bottom of form), represents tonnage which moves across the platform. Shipments picked up by or delivered from an intercity vehicle do not receive platform handling and weight should not be included. One count should be given to each ton of freight handled at each terminal. Only one count should be given at any one terminal, regardless of whether the freight is handled from truck to platform with subsequent handling from platform to truck or is handled direct from truck to truck. Freight picked up at a shipper's door or delivered to a consignee's door by a line haul vehicle; i.e., not handled through a terminal, should not be counted at such point of pickup or delivery as "Tons of freight handled over platform." The information may be obtained from dock foreman's daily report and should be used to determine the actual platform cost per cwt. and per labor hour. This cost factor may be

compared for different periods to determine the efficiency or inefficiency of forces and dock equipment involved.

Items (b), (c), (d), and (e) represent analyses of waybills showing percentages of total pounds billed, as follows:

(b) Originated and delivered by reporting carrier.

(c) Originated by reporting carrier and delivered to connecting carrier.

(d) Received from connecting carrier and delivered by reporting carrier.

(e) Received from connecting carrier and delivered to connecting carrier.

This information will indicate to the carrier the predominant type of traffic being handled and will show the trend of results of solicitation efforts. Analysis of terminal and sales expenses should be made to determine where corrective action should be taken to obtain more on-line traffic.

Estimates are permitted for the four types of traffic. However, it is necessary to make an actual test occasionally for purpose of proving the estimate. Analysis of waybills for an average day, made every two or three weeks, should be sufficient for an estimate for entire period. Officials of many lines prefer to maintain day-by-day percentages in order to determine future action. In fact, a complete change in sales tactics might be desirous as a result of the information revealed from the constant study of on-line and off-line traffic.

... Statistics

Continued from Page 64

"Daily Revenue Report" appears on the previous page, while the second, a "Vehicle Mileage Report," appears on this page. Both are accompanied by self-contained and detailed explanation.

If the "bugaboo" of statistics can be vanquished by the use of a system of reports, which, when expanded, would produce the desired data, a greater use of statistics would be more widely adopted in the motor carrier industry.

Various kinds of business enterprises are, at one time or another, caught short by inflation—higher costs of doing business. Usually the average business can promptly pass the effect of higher costs to the customers. However, the motor carrier industry, because its selling prices (freight rates) are strictly regulated and thus limited to certain boundaries, usually wait until the wolf is virtually at the door before seeking relief from regulatory bodies. Thus, in the interim, it becomes necessary for carrier management to soften the blow by judicious corrective measures, based on costs of performing certain phases of the operation.

The terminals, where manpower costs are the predominating factor and where costs of facilities for handling, including loading, unloading, checking, storing, rating, and billing are of great concern, have most keenly borne the burden of increased costs and it is here that cost studies, through use of statistics, should first be concentrated. Proper records will indicate revenue, number of shipments billed, and tonnage by individual terminal points and when compared with certain terminal costs will indicate to management the extent of efficiency of force and equipment.

Line haul costs are major items to a carrier. Statistics, if used, will indicate the sufficiency or lack of full utilization of both equipment and manpower. Obviously, it would constitute poor management to use an eight-hour minimum driver, and equipment, on a short five- or six-hour schedule, when the operation

(TURN TO PAGE 146, PLEASE)

Vehicle Mileage Record				Month of <u>19</u>
Date	Intercity Mileage	Pickup and Delivery Service Mileage	Hours	
1				
2				
3				
4				
29				
30				
31				
Totals				
				Unit No. <u>Assigned Service (Intercity or PUD)</u>
				Total Intercity Mileage
				Total Pickup and Delivery Mileage
				Total Pickup and Delivery Hours
				Truck Tractor Trailer

PROCEDURE FOR USE OF VEHICLE MILEAGE RECORD (ABOVE)

This form provides space for recording intercity miles and pickup and delivery miles and hours, day by day, for a full month. A separate form should be prepared for each unit of equipment involved in intercity or local operations.

Provision is also made for showing equipment unit designation, indicating whether equipment is owned, leased, or Purchased Transportation, regularly assigned service designation (Intercity or Pickup and Delivery), Total Intercity and Pickup and Delivery Mileages for the month, and Total Pickup-Delivery Hours for the month.

Purchased Transportation vehicles include vehicles with drivers, furnished by others, used in performing any portion of the carrier's revenue service, including local cartage and pickup and delivery of its intercity freight, under arrangements whereby payments for the service received is based on a percentage of revenue, charge per mile or hundred pounds, or other method of computation, but not including a division of joint tariff rates, and the expenses of the haul, including wages of drivers, are borne by the hired carrier or owner-operator. Vehicles furnished to the carrier without the services of drivers, for use in the carrier's transportation service are to be classed as leased vehicles.

Three columns, in the summary section, are provided to indicate type of equipment used—Truck, Tractor, or Trailer.

Total Mileage operated, intercity and pickup and delivery, is readily obtained as shown on the form and, becomes an accurate basis for calculating costs per mile. Pickup and delivery mileage is to be added to Intercity mileage for use in computing costs per mile and for use in the allocation of certain unit expenses between Line Haul and Pickup and Delivery.

Occasionally a truck or tractor assigned to pickup and delivery service, will make a road trip to relieve congestion or for some other reason. The mileage involved should be shown in Intercity Mileage column. Also, when Intercity trucks or tractors are used in pickup and delivery service, the mile-

age and hours used should be shown in the appropriate columns, thus providing accurate statistical figures.

Intercity mileages are to be posted to this record from intercity (over-the-road) drivers' trip reports.

Pickup and delivery mileages should be taken from city drivers' daily reports and they should show date, unit numbers operated, mileages operated, and number of hours vehicles are in operation.

The Mileage Vehicle Records, showing day-by-day operations of each unit used during the month, will definitely indicate the extent of utilization.

Trailer mileage records should be maintained for management control but mileages are not to be included in statistics. Combination tractor-trailer mile is considered as one statistical mile. Include only power unit miles in statistical reports.

Monthly summaries of intercity mileages, separated between trucks and tractors, and further separated between owned, leased, and purchased transportation for trucks and tractors separately, constitute mileage statistics required by the Interstate Commerce Commission.

This form also provides basic record for the payment of leased rentals and purchased transportation payments on a mileage basis. It may be expanded to include columns for recording costs, thus becoming a unit cost record. Columns may be provided for following principal items: Repairs and Servicing, Tires and Tubes, Gasoline or Diesel Fuel, Motor Oil.

The form also provides a means of determining accurate costs per mile based on total mileage.

Procedure for maintaining the mileage records involves placing all forms in numerical order, according to unit numbers and, after completion of month's postings, separating between trucks, tractors, and trailers, with a further separation of each to determine separate operation data for owned, leased, and purchased transportation vehicles. Summaries may then be prepared for statistical purposes and for managerial consideration.

Truck Parts Survey Shows

Seat Cushions

Average 45,931 Miles



SURVEY NO. 20

Part 1

First truck cab part requiring replacement is outside rear-view mirror. Floor mats wear out soon thereafter. Window regulators, weather stripping, door latch mechanisms have almost equal life

Analysis by A. W. GREENE, Managing Editor, Commercial Car Journal

IT APPEARS that outside rear-view mirrors are the first of a truck cab's parts to require replacement. The average life of this part, as shown in Table 1, is 33,598 miles. Considering the fact that this is a so-called "non-operating" part, this mileage seems too low. Even window regulators, an operating part, give over 50,000 miles. Seat cushions, too, subject to wear by, for example, friction, average almost 46,000 miles.

The range of averages of the various vocational groups for rear-

view mirrors runs from 16,350 to 60,000 miles. The range reported by individual fleets varies from 2000 to 100,000 miles. The lowest of the individual mileages reported comes from a state-operated fleet in the Government group. The municipal government fleets showed a much higher general average life for this part. They also are responsible for the high mileage in the overall range reported by all fleets in the Government group. It is quite likely that less rugged type service encountered is a contributing factor.



33,598 Miles

Outside rear-view mirrors average 33,598 Miles

Table 1

Life of this part is surprisingly short. Some fleets report as few as 2000 and 3000 miles. Best of fleet group averages is 60,000 miles

Replacement Parts-CAB/CHASSIS

VOCATIONAL GROUPS	Number of Fleets Reporting	WEATHER STRIPPING		DOOR LATCH MECHANISMS		WINDOW REGULATORS		OUTSIDE REAR-VIEW MIRROR	
		Mileage		Mileage		Mileage		Mileage	
		Range (Last 000 Omitted)	Average						
FOR-HIRE CARRIERS.....	18	10 - 200	75,313	10 - 175	65,000	10 - 200	66,765	8 - 75	33,313
FOOD DISTRIBUTION.....	29	10 - 200	48,000	10 - 150	42,577	10 - 150	43,958	5 - 80	30,423
GOVERNMENT.....	25	7.5 - 75	36,523	5 - 100	42,040	5 - 100	41,120	2 - 100	33,792
CONSTRUCTION AND MINING.....	4	25 - 100	58,750	20 - 150	70,000	30 - 150	70,000	50 - 70	60,000
INDUSTRIAL.....	5	50 - 100	78,750	30 - 150	75,000	35 - 100	63,000	3 - 100	53,750
PETROLEUM.....	6	45 - 150	82,500	45 - 200	92,500	50 - 195	115,000	30 - 55	45,000
PUBLIC UTILITY.....	14	10 - 70	36,786	8 - 100	46,286	8 - 100	43,429	5 - 100	41,071
RETAIL DELIVERY.....	17	5 - 100	46,786	5 - 100	31,375	10 - 100	35,000	3 - 50	23,533
TRUCK RENTAL.....	4	25 - 60	46,250	25 - 75	50,000	20 - 80	53,750	10 - 25	16,250
TRUCK AND BUS FLEETS, MIXED.....	1	50	50,000	50	50,000	20	20,000	30	30,000
TOTAL AND AVERAGE.....	123	5 - 200	51,472	5 - 200	49,641	5 - 200	50,748	2 - 100	33,598
ALL VOCATIONAL GROUPS									



While no comments have been solicited for the reasons for replacement of this part, a number of fleets volunteered information indicating that there was little or nothing that could be done to lengthen the life of this "non-operating" part. Many of the replacements, it was said, are the result of damage. Other comments point out that the prevailing method of mounting outside rear-view mirrors is unsatisfactory. Vibration soon loosens the fastenings which, after a few tightening adjustments, eventually become ineffective and the entire part must be replaced.

Weather Stripping Life Good

THE life of another of the so-called "non-operating" parts of a cab is shown in Table 1. This is weather stripping, and the national average life for this part is 51,472 miles. This seems to be good performance.

It is interesting to study the various vocational group life averages for this part. Government and Public utility fleets report the lowest group averages. The Petroleum industry reports the highest group average. The difference between the two 36,000 and 82,000 miles—is hard to rationalize. It can hardly be a matter of maintenance, and it is difficult to assume that local operating conditions would make such a big difference. Nor can weather conditions be assumed to be a factor. This leaves but one major consideration to look to for any increased mileage for this part; namely, quality of manufacture.

Table 1 also contains the life of two parts which are classified

as operating; namely, door latch mechanisms and window regulators. The life of these two parts is almost identical, there being only approximately 1100 miles difference; door latch mechanisms average 49,641 miles and the regulators 50,748.

Mats Average 34,504 Miles

TABLE 2 shows the life of three cab parts that are generally considered to get a lot of hard wear; namely, seat cushions, floor mats and pedal pads. Of these, floor mats are first to go; their life averages 34,504 miles.

As for the other two parts, seat cushions give well over 10,000 miles more service; their average life is 45,931 miles. The life of pedal parts comes about half way between, with an average of 40,982 miles.

Any discussion on the life of these parts would be incomplete without taking into consideration the relative service they get because of vocational operating conditions. An over-the-road driver, for example, naturally would give the seat cushions of his vehicle a lot less wear than the driver of a retail delivery vehicle. The table shows this difference, and the respective mileage seem to be in line.

In line, also, is the average life of truck cushions reported by bus fleets. They do not get nearly the use that bus cushions do; some of these trucks are not even in daily service. The big question mark seems to be why Government, Industrial and Public utility fleets show such a low mileage for these parts.

Two of the fleet groups mentioned seem to do much better in the case of floor mats and pedal pads. The Government fleets still are inexplicably low in the mileages reported. It must be mentioned that, again, it is the state-operated fleets that show the lowest averages in that group. While many of these state-operated vehicles are in heavy-duty service, that service, on the average, probably is no worse than, for example, fleets in the Construction group, which comprise such vocations as building, mine, quarry and gravel operations, and which show generally higher averages for all parts in the accompanying tables.



45,931 Miles

Another low mileage truck cab part is floor mat

Table 2

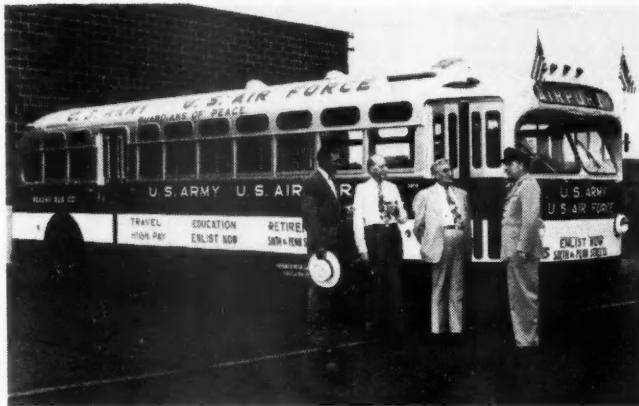
34,504 miles is national average. Some fleets get as few as 5000. A couple get over 100,000 miles. Pedal pads net 40,982, cushions, 45,931

VOCATIONAL GROUPS	Number of Fleets Reporting	SEAT CUSHIONS		FLOOR MATS		PEDAL PADS	
		Mileage		Mileage		Mileage	
		Range	(Last 000 Omitted)	Range	(Last 000 Omitted)	Range	(Last 000 Omitted)
FOR-HIRE CARRIERS	18	15 - 250	83,611	10 - 100	48,706	10 - 150	50,000
FOOD DISTRIBUTION	29	8 - 200	49,379	5 - 93	33,833	5 - 150	34,208
GOVERNMENT	25	7.5 - 75	31,420	6 - 75	24,500	5 - 90	33,364
CONSTRUCTION AND MINING	4	25 - 100	51,250	10 - 75	37,750	20 - 100	46,500
INDUSTRIAL	5	10 - 75	39,000	10 - 50	34,000	10 - 100	56,250
PETROLEUM	6	50 - 100	70,833	45 - 100	64,167	50 - 200	105,000
PUBLIC UTILITY	14	10 - 75	27,857	10 - 50	25,714	5 - 50	28,000
RETAIL DELIVERY	16	5 - 100	21,688	5 - 65	25,000	5 - 100	26,875
TRUCK RENTAL	4	10 - 30	23,750	5 - 30	22,500	10 - 40	22,500
TRUCK AND BUS FLEETS, MIXED	2	20 - 250	135,000	30 - 150	90,000	50 - 200	125,000
TOTAL AND AVERAGE	123	5 - 250	45,931	5 - 150	34,504	5 - 200	40,982
ALL VOCATIONAL GROUPS							

Composition of Vocational Groups as Used in the Accompanying Tables

FOR-HIRE CARRIERS—Motor Freight Operators in Local and Over-the-Road Service.
 FOOD DISTRIBUTION—Bakery, Dairy and Other Food Product fleets.
 GOVERNMENT—State, County, Municipal, and Federal fleets.
 CONSTRUCTION AND MINING—Building, Mine, Quarry, and Gravel fleets.
 INDUSTRIAL—Fleets operated by manufacturers.
 PETROLEUM—Production and Distribution fleets.

PUBLIC UTILITY—Gas, Power, Water, and Telephone fleets.
 RETAIL DELIVERY—(Other than Food Products), Dry Cleaning, Laundry, News paper, Coal and Ice, Department Store, Beverage fleets.
 TRUCK RENTAL—Agencies leasing motor trucks.
 TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.



PICKED pix OF INTEREST TO FLEETS

▲ Bus Aids Military Recruiting

The Reading (Pa.) Bus Co. repainted bus No. 715 red, white and blue to aid Army and Air Force in recruiting and scheduled it on their heaviest traveled routes. Left to right are H. B. Davis, chairman of Military Manpower Commission; C. E. Keefer, Supt. Equip.; A. J. Stratton, Pres. of Reading Bus Co. and recruiting Capt. J. B. Corcoran, USA

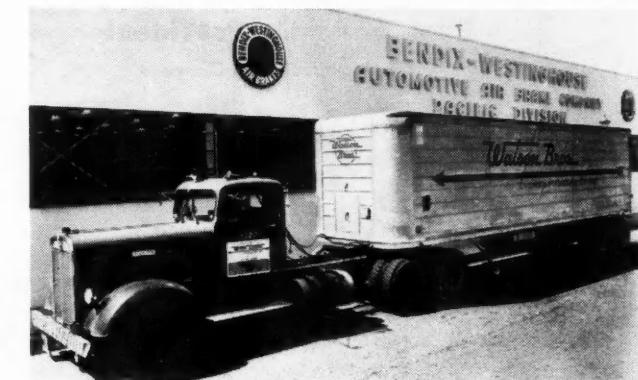
▼ Freedom Bell Crusades on Truck

Mack diesel and trailer rig furnished by Bigley Bros., Inc., NYC, recently went on tour of several large cities carrying "The Freedom Bell," the symbol of nationwide "Crusade for Freedom." The "Crusade" is headed up by Gen. Lucius D. Clay and is aimed to combat communism. After tour, bell will be hung and rung in Berlin on UN Day



▼ Truck Services Planes

This large mobile aircraft air conditioning unit used by United Air Lines is mounted on an International Model LC-160 truck chassis, one of the first cab-forward models to come off the IH production lines in eight years. The conditioner, one of five to be placed at key points in UAL's 13,250-mi system, was designed to service the company's large four-engine Mainliner passenger airplanes



▲ Bendix-Westinghouse Trucks from West

Just an ordinary West-Coast tractor trailer job but it's carrying first full load of Bendix-Westinghouse automotive air brake parts from new western plant to company headquarters in Elyria, Ohio. This in spite of recent anti-truck comments by Vice-president Andrew J. (ship-everything-by-rail) Phelps of the totally unrelated Westinghouse Electric Corp.

▼ "More Bounce to the Ounce"

Workmen install section of "rubber" highway, part of a five and one-half mile stretch in Mass. on Route 1 from R. I., north to North Attleboro. Pavement consists of a base 1 1/4-in. layer of heavy stone, rubber and asphalt; top is 1 1/4-in. layer of fine stone, rubber and asphalt. The new meltable rubber compound used, was developed by Naugatuck Chemical Div. of U. S. Rubber Co. Rubber pavement is expected to reduce road maintenance



Frequent inspection, precision adjustment, careful diagnosis of failures will go a long way towards eliminating contact point failures. Use of heavy-duty contacts will pay off

By J. E. Echlin, President

Echlin Manufacturing Company

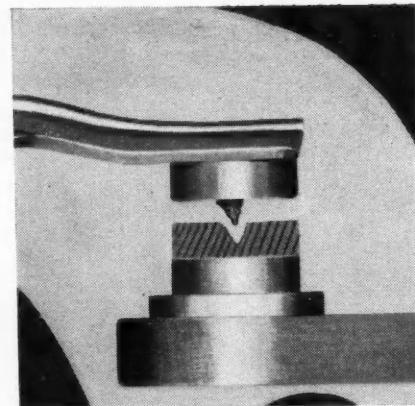


FIG. 1. Under-capacity condensers cause pitting on the negative side

Contact Point Failures Can

THE LATEST figures published by the American Automobile Association show that in one year they were called upon to service 4,389,000 cars with ignition troubles. It is very evident from this fact that ignition troubles are on the increase. Ignition trouble with trucks can be assumed to be proportional in number.

The ignition contacts are the most troublesome part of the ignition system. Ignition contact failures may be divided into two classes:

1. Causes of failure in which the contacts are not to blame, and
2. Causes of failure which originate in the contacts.

Ignition contacts are often replaced without correcting the underlying cause of failure. Premature failure can usually be traced to one or more of the causes that follow.

High Voltage—Even though a voltage regulator may be adjusted correctly, it is to be expected that over a period of time the voltage will rise. Moderately high voltage causes contacts to pit or to oxidize slowly. Extremely high voltage causes very rapid oxidation, the oxide thus formed usually being blue or black.

When ignition contacts oxidize or pit, the first thing to test is the adjustment of the voltage regulator. For any 6-volt system, regardless of make of car, a maximum of 7.4 volts is sufficient for all purposes—to keep the battery well charged and for maximum battery life. Any higher voltage may cause contact trouble.

Faulty Condenser—High internal resistance of a condenser, or loose internal or external connections will cause ignition contacts to arc excessively. This is another cause for heavy blue or black oxide to form on the face of the tungsten.

A condenser that leaks excessively will cause contacts to oxidize slowly and may result in contact pitting. Wax impregnated condensers that have a very slight leak when cold, may leak excessively when heated, due to close proximity to the engine.

Under-capacity condensers cause contacts to pit on the negative side. Fig. 1 illustrates the way contacts would pit, assuming the electrical system to be one in which the negative side of the storage battery is grounded. In that case, therefore, pitting, such as illustrated, would indi-

cate that the condenser in use is under-capacity. If the pit is on the reverse side—that is, on the movable contact arm, with a negative battery, it would indicate that the condenser is over-capacity. Likewise, Fig. 1 illustrates how the contacts would pit with a positive ground battery and an over-capacity condenser. With a positive ground battery the pit would occur on the opposite contact from that illustrated if the condenser were under-capacity.

Ignition parts manufacturers build condensers of standard capacities that are easily mounted in the original place provided for them. The assumption by the manufacturer is that the truck, bus or passenger car will be operated under average driving conditions. Special driving conditions are not taken into consideration in arriving at the capacity of the condenser. Yet a vehicle operated at abnormally slow speeds most of the time—such as a police cruising car—must have an over-capacity condenser for best results. On the other hand, a vehicle operated predominately on the highway at high speeds, must have an under-capacity condenser for

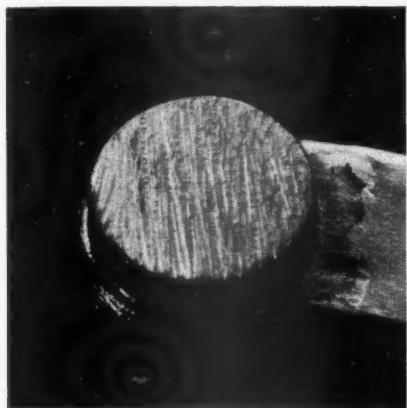


FIG. 2. Oxidation takes place when peaks and valleys are left by a file

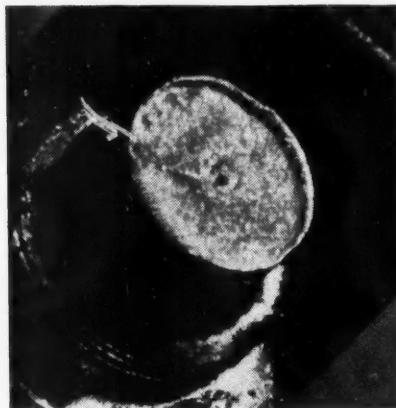


FIG. 3. Misalignment caused this failure. Contacts must be parallel

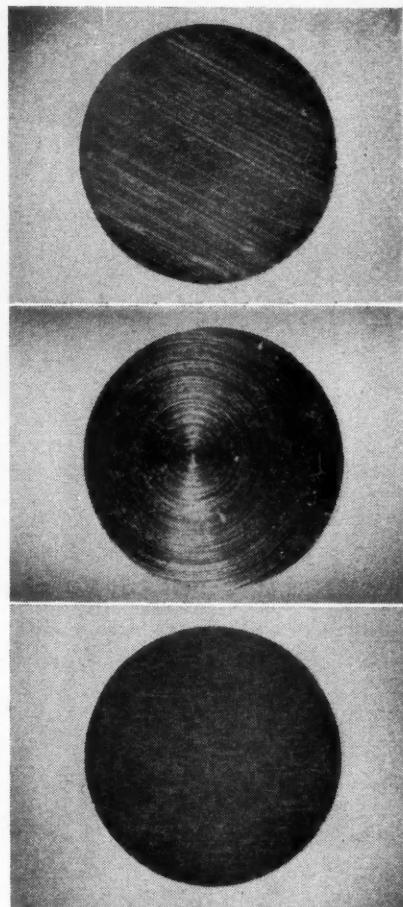


FIG. 4. Top, flat ground tungsten shows undesirable peaks and grooves. Center, Radius ground tungsten shows some scratches. Above, Burnished tungsten is smooth and will have less tendency to oxidize

Be Reduced

best results. Special capacity condensers are made by a few manufacturers.

Filed Tungsten—As an emergency measure and sometimes assuming that it is economy to do so, mechanics file tungsten contacts. This produces such a rough surface that rapid oxidation takes place. Fig. 2 is an ordinary filed tungsten contact magnified. The entire surface of both faces of tungsten is destroyed, and in place of a smooth surface, is a series of peaks and valleys formed by the file. When a peak of one tungsten contact meets a peak of the opposite tungsten contact, the actual connection between them is just like bringing two knife edges together at an angle. A pinpoint contact results. Instead of giving the contacts a proper chance to break in, they oxidize quickly. When contacts are not broken in properly, they fail to function efficiently throughout their entire life.

Misalignment—Fig. 3 also illustrates the appearance of an ignition contact after considerable use and what happens as a result of misalignment. The raised portion of the con-

tact did not bombard down as a result of use. The contact opposite this would very likely scrape its way out of contact, thus failing to make a clean break at the instant the contacts should open. Good alignment of contacts, in so far as one face being opposite the other is concerned, can be accomplished by a simple bending operation. However, contacts cannot always be aligned so that the faces are absolutely parallel. This is not important, because no matter how well contacts are aligned, only a small portion of the two pieces of tungsten comes together when the contacts are first installed. A larger contact surface develops as the contacts are used.

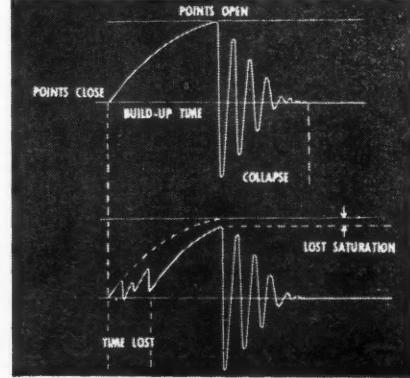
Tungsten—The important difference in tungsten lies in the finish. Fig. 4 shows photomicrographs of different finishes currently used by reputable manufacturers. The illustration of the flat ground tungsten shows that the contact surface is covered with tiny scratches and grooves. These scratches and grooves form peaks and valleys. They are cut into the tungsten by the abrasive wheel used for cutting the tungsten disc from the rod.

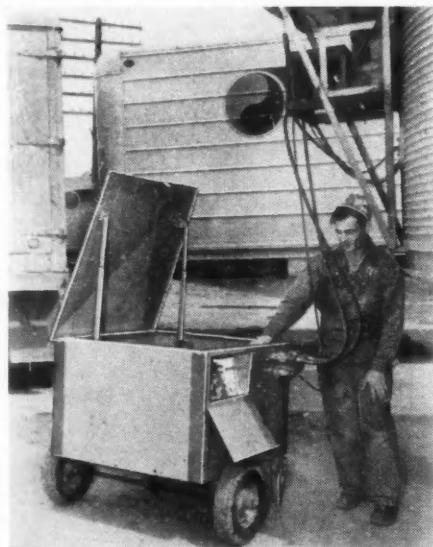
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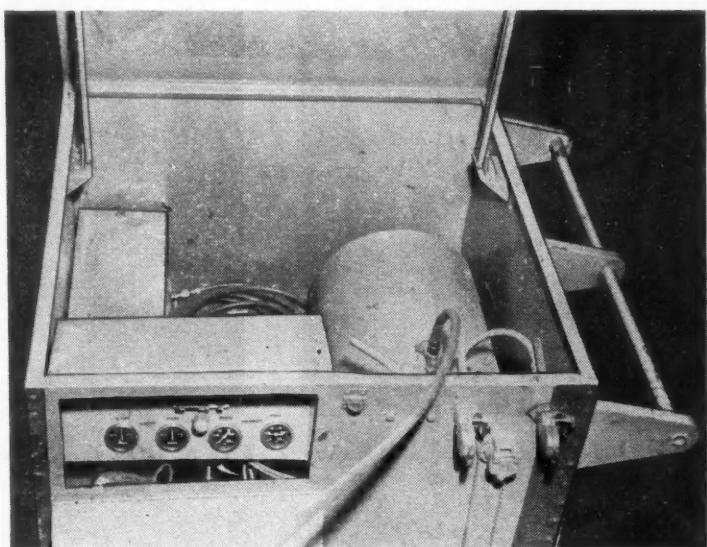
FIG. 5. Top, High-speed contact, and below, a heavy-duty set recommended for certain rugged operating conditions

FIG. 6. Build up of magnetic field in the ignition coil is shown here in upper graph. Lower graph shows how bouncing of points produces a loss in saturation of coil





Sheet metal compartment mounted on pneumatic tires contains all instruments necessary for a brake check



Equipment includes testers for stop, tail, marker lights so that trailer can be checked with cart's air reserve tank. Extra supplies are also carried for making ordinary brake repairs

PORTRABLE BRAKE TESTER

Checks Everything But the Driver

Shop-made test cart with air tank, gages, connections and battery charger permits a complete, quick check of air or electric brakes

F"FROSTY" Meehan, general superintendent of Northern Pacific Transport, with headquarters shop at Billings, Montana, has long had a reputation in the industry for coming up with good ideas. One of Frosty's latest is a trailer test wagon which A. E. Clemmons, shop foreman, designed and built.

The two wheeled cart is kept in a

sheet metal shed at the loading dock where day and night trailer service is maintained. The cart has the same dash equipment, with battery connection, which is found on a truck. Equipment includes: stop lights; tail lights; marker lights; complete couplings so that the trailer brake can be tested with the cart's air reserve tank. Cart also carries supplies needed for

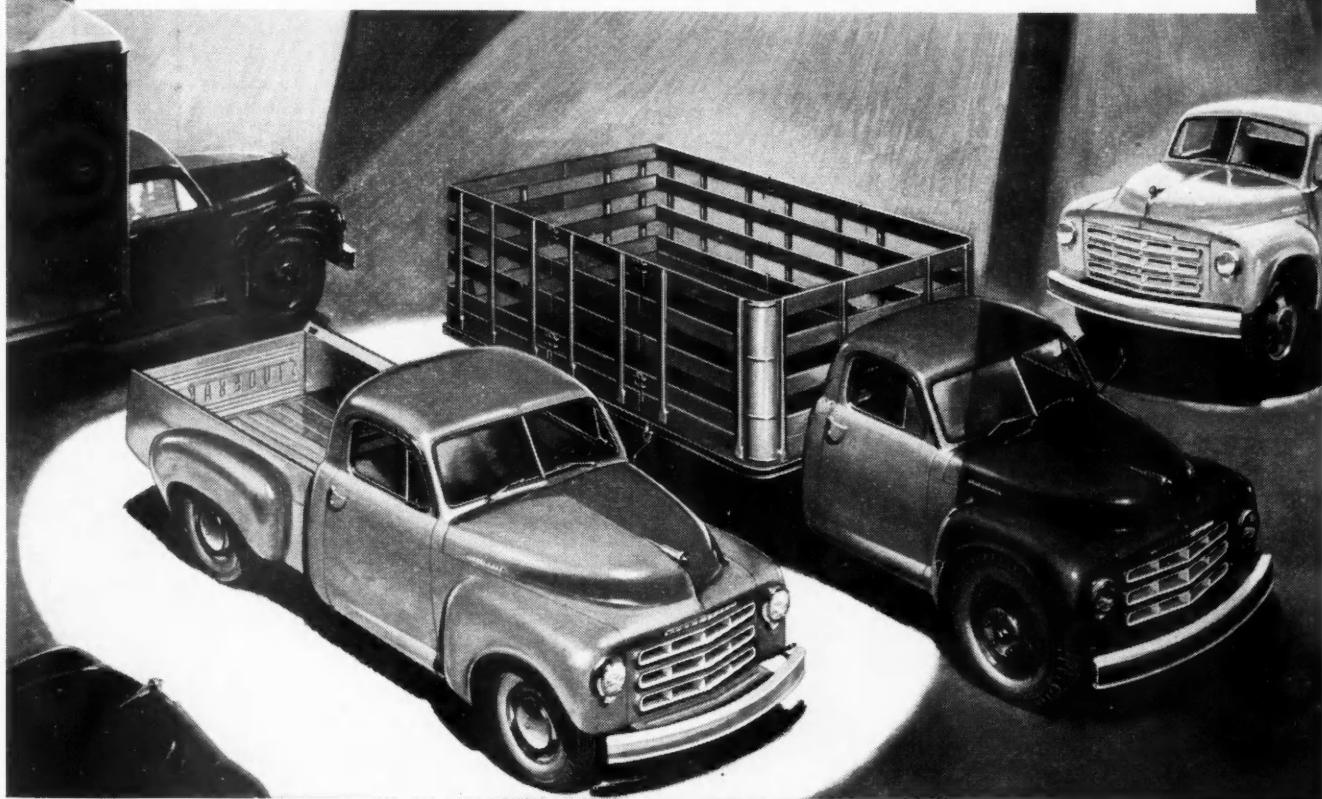
trailer replacement, such as: light bulbs, lenses (light and reflex), pipe fittings, and spare hoses.

The cart also carries a built-in charger so that when it is in the shed, a line can be connected to an outlet and the battery charged.

At every fourth door at the freight house loading dock there is an air hose connection. The air reserve tank in the cart can be refilled at any of these conveniently located air outlets. This cart, which carries everything needed to make a complete trip trailer test, is small enough that it can be pushed under the trailer out of the way.

"They are not for sale, by the way," Frosty Meehan says. "If you are interested in having one, stop in and see ours, or write us and we will send you a blueprint. You can whip up one of these for around four hundred dollars."

The spotlight is on Studebaker trucks!



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SPEND less for gas! Spend less for repairs! Save all the way every day! Let the pulling power, the staying power, the earning power of a Studebaker truck do a solid job of saving on your hauling!

Put a Studebaker truck to work and watch the way it makes costs nose dive—not just for a while—but week after week!

Notice how pleased the lucky man is who gets to drive the new Studebaker!

With its low cab floor, its fully enclosed safety steps, its enormous windshield and window visibility, a Studebaker truck lightens the day's work a driver has to do.

Adjustments and minor repairs are a cinch

—on the road or in the garage—thanks to a Studebaker truck's "lift-the-hood" accessibility to engine, ignition and instrument panel wiring.

Studebaker trucks come in a comprehensive range of sizes and wheelbases—half ton to two ton models. Two great Studebaker truck engines—the high efficiency Econ-o-miser and the high torque Power-Plus.

Stop in at a Studebaker showroom. Get the convincing proof of the amazing economy of the husky, handsome new Studebaker trucks.

STUDEBAKER TRUCKS

Noted for low cost operation

The Studebaker Corp'n, South Bend 27, Indiana, U. S. A.

New Truck Registrations by Makes by States*

STATE	Auto-car	Brock-way	Chevrolet	Diamond T	Diveo	Dodge	Federal	Ford	FWD	GMC	International	Ken-worth	Mack	Pontiac	Reo	Sterling	Stude-baker	White	Willys	All Others	Total
Alabama	July 1	1296	2	3	192	4	676	278	251	22	1	116	20	48	3	2,910					
	7 Mos. 3	5702	12	16	951	4	4472	1297	1013	111	11	863	132	280	9	14,887					716
Arizona	July	248		5	42		204	91	47	1	1	38	3	35						3,785	
	7 Mos. 1335	1335	5	11	255		1129	390	249	6	3	208	17	150	9					2,602	
Arkansas	July	1114	5		173		761	229	132	4	2	122	12	43	3					13,156	
	7 Mos. 5124	5124	18	2	1120	2	3808	1195	823	27	19	724	12	264	5					4,139	
California	July 5	1583	19	33	328	3	1136	14	406	11	12	181	28	78	18					32,608	
	7 Mos. 13023	13023	153	249	2045	17	9083	30	2997	99	132	51	1597	180	571	143				1,914	
Colorado	July	804	3	4	159	2	426	112	185	7	1	104	10	79	7					8,938	
	7 Mos. 3736	3736	25	29	569	7	2269	3	684	12	19	484	26	307	28					2,938	
Connecticut	July	5	330	8	11	99	9	180		63	106	48	12	27	2					5,175	
	7 Mos. 1671	1671	53	67	408	39	1388	2	403	472	122	21	218	80	127	17				304	
Delaware	July 1	121	4		26		66	20	44	1	1	64	18	24	11					1,810	
	7 Mos. 9	658	11	4	120		555	126	187	6	7	7	3	4					248		
Dist. of Col.	July	3	87		32	1	66	20	20	1	1	25	11	27	4					1,629	
	7 Mos. 8	622	14	38	124	6	429	136	139	8	9	155	34	97	12					2,349	
Florida	July	826	19	8	204	1	654	134	173	22	10	861	115	495	36					13,295	
	7 Mos. 2	1498	75	42	1121	10	4138	775	881	180	16	120	22	23	4					3,244	
Georgia	July 1	1388			225	20	993	203	206	1	19	129	22	23	4					20,886	
	7 Mos. 2	7427	35	19	1670	24	6868	1500	1559	134	13	1069	175	297	16					782	
Idaho	July	255	8	1	41	2	187	95	83	8	2	30	7	61	1					4,323	
	7 Mos. 1499	29	1	237	7	1019	2	490	447	43	14	4	17	235	24					1,629	
Illinois	July 5	1339	54	13	283	3	1007	218	336	17	4	123	37	31	6					3,484	
	7 Mos. 52	9601	297	95	2117	15	7219	5	1840	3119	151	45	80	3	1047	320				26,370	
Indiana	July	780	12	14	192	1	627	178	227	4	1	126	38	38	3					2,248	
	7 Mos. 5	4815	61	44	986	12	4282	2	960	1689	45	21	41	864	198	213	33			14,293	
Iowa	July 1	1413	12	5	323		920	226	437	10	2	128	23	45	1					3,554	
	7 Mos. 2	6730	84	36	1180	1	4871	918	2037	52	17	642	94	176	10					16,886	
Kansas	July	1040	3		123		729	1	200	282	6	3	84	7	23					2,485	
	7 Mos. 4879	34	15	621	3	3493	1	963	1384	7	23	437	45	142	5				12,083		
Kentucky	July	1109	4	1	174	2	876	356	267	3	1	114	8	87	1				2,806		
	7 Mos. 4	5794	55	27	856	12	4054	1563	1300	22	23	555	61	459	6				14,808		
Louisiana	July	1044	5		175		705	242	165	3	1	116	8	42	1				2,507		
	7 Mos. 3	4562	31	4	849	3	4035	1	1240	846	18	13	711	46	228	15			12,614		
Maine	July 2	244	3		47		96	68	74	5	1	215	23	45	5					4,529	
	7 Mos. 9	1667	7	4	352	7	935	511	558	55	15	8	1	36	11	13			1,184		
Maryland	July 2	5438	4	13	119	2	338	71	107	9	1	213	99	76	10				7,075		
	7 Mos. 11	2331	35	46	635	38	2015	1	454	617	103	8	31	109	36	48	1		2,214		
Massachusetts	July 26	744	21	13	254	9	488	135	232	34	8	20	15	51	511	218	165	8	10,634		
	7 Mos. 144	3401	108	101	1070	26	2850	725	1017	237	52	65	51	218	19	61	2	5,429			
Michigan	July 1	2234	10	30	465	3	1741	1	334	359	21	8	17	123	19	61	2		5,554		
	7 Mos. 12	10149	71	146	1799	69	6797	2	1685	1683	137	18	140	645	156	216	23		25,747		
Minnesota	July 1	1311	9	31	208	3	822	217	403	15	8	183	8	59	2				3,285		
	7 Mos. 3	5733	68	65	969	14	4360	10	946	1945	33	63	25	995	73	182	32		15,534		
Mississippi	July	981	1		165		615	1	316	180	22	14	594	38	187	8			12,030		
	7 Mos. 1	4709	9		809	4	3389	1	1409	829	11	3	90	24	49	3			3,224		
Missouri	July	1417	4	2	184		898	272	264	11	3	759	164	227	33				18,824		
	7 Mos. 5	7871	33	46	1279	2	5051	2	1651	1555	3	86	40	82	7	113	7		1,638		
Montana	July	637	3	1	101	1	372	1	144	162	2	2	278	14	408	8			5,378		
	7 Mos. 7	1978	24	1	368	9	1217	2	396	632	15	4	103	8	89	1			2,556		
Nebraska	July	994	34	6	142	1	711	204	273	7	3	103	8	26	1				10,723		
	7 Mos. 4	4066	123	12	553	3	3124	7	777	1194	18	15	446	57	288	13			219		
Nevada	July	73			13		53	38	14	1	2	56	2	53	1				1,011		
	7 Mos. 3	364	3		49		248	156	66	8	2	15	1	15	15				378		
New Hampshire	July 1	138	3	2	35		82	29	40	8	2	100	13	72	1				2,433		
	7 Mos. 12	744	13	7	299	3	571	218	274	60	8	24	172	85	123	36			2,855		
New Jersey	July 32	30	1135	13	12	214	1	677	1	237	229	52	8	67	55	1			15,431		
	7 Mos. 106	155	5284	158	135	1180	43	4114	7	1342	1363	336	89	41	11	21	312	17		956	
New Mexico	July	498			32		203	97	47	2	1	323	14	122	13				4,872		
	7 Mos. 1	2180	1		286		1069	2	571	263	4	20	196	123	213	6			3,779		
New York	July 25	55	1940	68	25	730	38	1119	1	499	557	100	12	35	5	1	172	36	5,625		
	7 Mos. 328	424	10993	530	217	3678	149	7281	33	2975	3711	1002	81	237	32	1192	645	735	209	34,450	
North Carolina	July 8	1405	5	2	203		963	204	184	40	5	141	735	185	192	6	1391	92		16,391	
	7 Mos. 44	6349	24	38	1057	13	527	57	109	1	2	352	2	46	1				925		
North Dakota	July	326	2		52		328	3	227	596	7	21	206	95	77	3			5,838		
	7 Mos. 1	1295	13	2	241	2	1068	227	596	56	11	212	12	100	56	6	1,102		14,823		
Oklahoma	July	1345	1		216		977	4	270	223	1	16	636	126	212	10			3,237		
	7 Mos. 1	5819	10		35		1037	11	1339	1195	31	16	62	4	54	6			7,645		
Oregon	July	369	3	3	85		242	139	116	7	7	320	36	366	36			6,070			
	7 Mos. 13	2557	55	17	513	2	2073	776	785	24	61	117	140	11	140	11			32,811		
Pennsylvania	July 19	37	2095	43	9	669	15	1402	553	632	56	11	192	117	140	11			6,070		
	7 Mos. 102	313																			

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catalogs, pamphlets, charts—chosen to help
fleetmen improve operation and maintenance.

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L44. Welding Booklet

A booklet on "The ABC's of Welding High Tensile Steels" has just been made available to users of low alloy, low hydrogen electrodes.

It shows the importance and effectiveness of low hydrogen electrodes in welding low alloy, high tensile steels, mild steel under highly restrained conditions, and sulphur-bearing free machining steels. In simple question and answer form, the booklet compares mild steel and low hydrogen electrodes, as related to pre-heating, underbead cracking, moisture in the arc and in the coating, burn-off rate, cost of operation, applications, and stress relieving of the weldments. Write L44 on the postcard for your copy.

L45. Maintenance Forms

Six new practical maintenance forms have now been added to the list of simplified forms now available to fleet operators. To the fleetman who wants accurate service and cost data on the maintenance and operation of his vehicles, these forms offer many advantages. They provide a quick method of putting important information in writing.

The tire change form shows vehicle number, speedometer reading, tire size and spaces for tire number removed and replaced. The tire record is printed on 2-ply index bristol and provides full data on a tire, showing

costs, mileage, vehicle number, cause of removal, repairs and recaps, total miles and cost per mile.

An 11 x 17-in. wall chart is now available, with a space for each day in the month for up to 55 vehicles. This permits a quick recording of any operation such as oil change, tire check, filter change, gasoline, etc. For drivers who make retail deliveries or a number of separate trips each day, the driver's daily report is a convenient form for recording information. It provides space for ten trips, with time out and in, number of stops, daily speedometer readings and mileage, gas and oil, etc. Size of this form is 4 x 6 in.

The shop time card and the driver's trouble report complete the list. These fleet forms can be easily kept up-to-date by any attendant or vehicle driver, and assure accurate and complete service, maintenance and cost information. Sample of these new forms are available on request. Just write L45 on the free postcard.

L46. Fire Fighting Data

An educational booklet on fire, suitable for distribution to fire protection personnel, "Fundamentals of Fire Extinguishment" is a 4-page illustrated discussion of what fire is, classes of fire and proper methods of extinguishment.

Originally introduced as an aid in training salesmen, "Fundamentals of

Fire Extinguishment" has been widely requested and used by fire departments, industrial fire brigades, insurance companies, and other fire protection groups. Copies are available by writing L46 on the postcard.

L47. Tire Chain Data

This new booklet on tire chains titled, "There Is No Substitute For Chains," presents, in capsule form, sales arguments for the use of tire chains. It contains a chart showing the stopping distances necessary when driving without chains on ice and snow. It points up the reasons why tire chains are necessary for safe winter driving. Other chain facts are given, along with seven rules for safe driving on snow and ice.

Copies of the booklet are available. Just write L47 on the postcard.

L48. Lubrication Data

This 20-page booklet, designed to show the correct use of the Veedol Safety Check Lubrication Guide, is available to truckers. Individual charts in the booklet show graphically lubrication details of every model of car and truck in the U. S. Emphasis is on clarity and simplicity. Profusely illustrated with drawings and diagrams, this guide will provide valuable information on the location of lubrication points, the type of lubricants to use, and the mileage intervals for applying them.

Write L48 on the free postcard for a copy.

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NEW PRODUCTS

Illustrating and reviewing newest developments
in parts, accessories, shop equipment and tools.

For more information use the attached postcard.

P1. Size Control Gage

This size control gage provides a continuous check on hole size during honing operation. Indicator gage is actuated by the stone feed-up dial on the machine. The gage shows how fast and how much stone feeds up and indicates when to gage hole. All Model MBB Sunnen honing machines and certain MB and MBH models can be equipped with the size gage. Sunnen Products Co., St. Louis, Mo.

P2. Electric Fuel Pump

This electric fuel pump is available in 6-, 12-, 24- and 32-volt models. Developing a 3½-lb pressure, the units can deliver 18 to 20 gal per hr with a current consumption of .6 amp. Featured



are waterproof construction, contact points which operate in liquid, die-cast aluminum housing with plastic shell and wide range pressure adjustment. Multiple units can be mounted in parallel to increase capacity. Vepco Fuel Pump Sales, Detroit, Mich.

P3. Service Dollie

A "dollie" for servicing rear axles grips the axle in two vise like clamping jaws which are adjustable to grip all sizes of axles. Separating axle halves and holding is possible. A special speed wrench operates screw mechanism which expands or contracts the "dollie." Unit is made of welded tubular steel and is mobile. K. R. Wilson, Buffalo, N. Y.

P4. Brake Reliner

A new brake reliner called the Knu-bonder, has a capacity for bonding brake linings at the rate of 30 to 50 shoes per hr. The unit will accommodate four shoes at a time of the following universal sizes: 9, 10, 11 or 12 in.

Heavy springs produce an even pressure of 75 to 100 psi. Thermostatically-controlled heating elements cast integrally with the anvils supply heat to temp of 400 to 500 deg F. Unit operates on 220-volt single phase circuit. A timer is supplied that can be set to indicate the proper bonding cycle. Lapeer Mfg. Co., Lapeer, Mich.

P5. Crane Arm

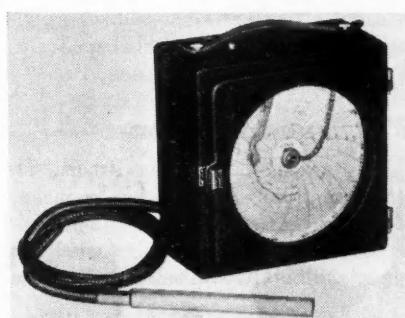
This slewing crane arm for fork trucks is pivoted so that a two-way hydraulic cylinder can swing it laterally 20 deg to either side of center. The arm is readily detachable so that the truck can be used with standard pallet forks. It can handle loads up to 80 lb at 80-in. load center. Towmotor Corp., Cleveland, Ohio.

P6. Drawer Divider

A tilt-type divider for Equipto parts bins and drawers is said to give full visibility regardless of how full drawer is, and features dust-proof grooved side panels on drawer for giving positive rigid adjustment of dividers. Equipto, Aurora, Ill.

P7. Temperature Recorder

A continuous record of actual temperatures in refrigerated trucks is provided by this self-contained recording thermometer. Known as the Tag Mini-



corder, the unit requires no connection to any power supply. It records temperatures over a period as long as seven days without attention. The temperature range, in various models, are within the limits of minus 30 deg F. to plus 165 deg F. Charts are available for 24-hr, 72-hr, 3-day and 7-day recording. Special two-pen models are made for on-off recording of related equipment. The instrument measures 5¾ x 5¾ x 4¼ in., and weighs 3½ lbs. Tagliabue Instruments Div., Weston Electrical Instrument Corp., Newark, N. J.

(TURN TO PAGE 78, PLEASE)

New Product Descriptions

Continued from Page 77

P8. Paint Heater

A "cup-heater," known as the Thermalcup, offers temperature control for "hot spray" in small production work.

The unit is made of welded aluminum spinnings and is a little larger than a 1-qt spray-cup (7 3/4 in. x 4 3/4 in.) and weighs only 25 oz. A new type heating element is incorporated which reaches a working temperature in 8 to 14 min. The unit is available only in 110-120 volts. Thermalcup, Inc., Cleveland, Ohio.

P9. Lathe

A new line of small precision toolroom lathes, known as the "Light Ten," take work up to 10 in. in diameter over the bed. Swing over cross slide is 6 1/4 in. and distance between centers varies from 16 1/8 in. to 28 1/8 in., depending on bed length. Driven by a 1/2-hp motor, ample power is provided for all work within the capacity of the lathe. The headstock is back geared, providing spindle speeds ranging from 48 to 1435 rpm. South Bend Lathe Works, South Bend, Ind.

P10. Soldering Gun

The new light duty soldering gun features dual spotlights to eliminate shadows, and over/under terminals to brace tip and improve visibility. The unit employs a dual heat (100/135 watts) for light soldering with 5-sec heating, a trigger-switch control which adjusts heat and a chisel-shaped tip. Weller Electric Corp., Easton, Pa.

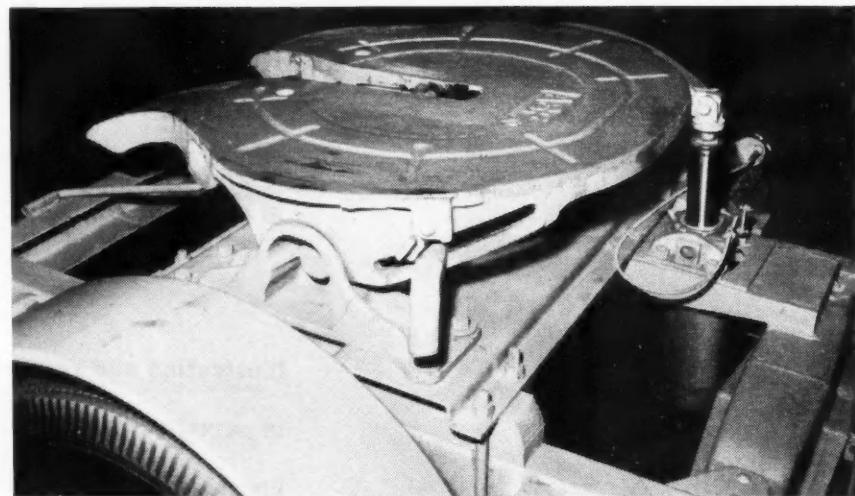
P11. Sweeper Broom

This sweeper, the Roto-Broom, attaches to front end of truck by means of regular snow plow attachment. Unit is powered by a 5.7-hp air-cooled gas engine with oil bath air cleaner, coupled



to the brush through speed reducer, sprockets, roller chain to provide a brush speed of 100 rpm. Brush is 87-in. long, 2 1/2 ft in diam. Spray attachment is available for extremely dusty conditions. Frink Sno-Plows, Inc., Clayton, N. Y.

P12. No-Tilt Lock for Fifth Wheel



A new hydraulic lock to prevent trailers from tilting when jack-knifed, consists of a hydraulic cylinder attached to the front of the fifth wheel and mounting plate. A cable with control knob installed on the tractor floor is attached to a valve in the cylinder. The fifth wheel oscillates freely on the road when the valve is in open position. Just before jack-knifing the valve is closed which locks the fifth wheel in a horizontal position and prevents it from tilting. Hodo & Vandergriff, Inc., Montgomery, Ala.

P13. LP Gas Torch

The new portable LP gas torch features instant lighting and cartridge refills. Equipped with interchangeable burners the torch lights without pre-heating and is said to reach a flame temperature of 3660 deg F. Fully loaded, torch weighs 2 1/2 lb. The Otto Bernz Co., Inc., Rochester, N. Y.

P14. Stud Puller

A threaded collet type stud remover and inserter has 14 different collets available to handle studs from 1/4 to 5/8 in. in diameter in both fine and coarse thread sizes for the smaller model. The larger model has 6 collets available for 3/4 to 1 in. diameter studs in both thread sizes.

Featured is their ability to operate in restricted areas. Outside diameter of the small unit is only 1 3/8 in., and the larger unit measures 2 1/8 in. Units are machined of high grade steel and hardened and tempered. Snap-on Tools Corp., Kenosha, Wis.

P15. Bench Grinder

A 1/3-hp grinder used with a wire-brush for cleaning automotive parts features steel spark guards, adjustable tool rests, a three-wire cord, balanced motor and wheels, sealed motor and lubricated-for-life ball bearings.

This unit measures only 20 in. from side to side with safety shields, 9 in. high, and 8 in. deep. The Delta Power Tool Div., Rockwell Mfg. Co., Milwaukee 1, Wis.

P16. Engine Dynamometer

A line of engine dynamometers designed for engine run-in will operate with hp ratings from 50 to 2000 at many different speeds. Positive as well as flexible control of the torque load set for the engine to be "run in" or tested is guaranteed. Standard equipment includes direct reading electric speed and horsepower meters. Clayton Mfg. Co., El Monte, Calif.

P17. Bolt Remover

This hand tool is used to tighten or loosen bolts or nuts with a few raps with a hammer. Known as the Impak-driver, it is constructed on a cam principle that translates impact from hammer blows into torque.

Available in sets with different combinations of bits and sockets for various sizes and types of screws, bolts and nuts, the units are constructed of alloy steel. H. K. Porter, Inc., Somerville, Mass.

P18. Impact Tool

Two new air-operated Impactools, Size 504 for nut running up to 3/8-in. bolt size and Size 510 to accommodate up to 3/4-in. bolt size, feature pistol grip handles, balance and grooved reversal caps. Built-in automatic lubrication and air strainers are incorporated. Model 510 weighs 11 1/4 lb and measures 10 1/8 in. Model 504 weighs 5 3/4 lb and is 8 9/16 in. long. Ingersoll-Rand Co., New York, N. Y.

(TURN TO PAGE 188, PLEASE)

Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY
COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle

Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe
Bu or Bud—Buda
BW—Bendix-Westinghouse
C—Chevrolet
Cl or Cla—Clark
Con—Continental
Cum—Cummins-Diesel
Eat—Eaton
F—Ford
Fu—Fuller
G-H—Goodyear-Hawley type
H—Hotchkiss
Her—Hercules
HS—Hall-Scott
L—Lockheed
LH—Lockheed front, Wagner "Hi-Tork" rear
LT—Lockheed type front; Timken rear
LW—Lockheed front, Wisconsin rear
M—Midland
N.P.—New Process
O or Ow—Own
Op or Opt—Optional
Shu—Shuler
Spi—Spicer
T or Tim—Timken-Detroit Axle Co.
Tw—Timken-Detroit—Westinghouse
TW—Timken-Detroit—Wisconsin
WG—Warner Gear
Wau—Waukesha
W or Wis—Wisconsin
Wg—Wagner "Hi-Tork"
Wg—Westinghouse
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
— All wheels.

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
D or Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft
2—Rear wheels.
4—Four wheels.
6—Six wheels.

P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

A—Cast alloy iron.
A—American Car Foundry
C—Cast iron.
C—Composite Front, Cast Iron in rear.
C—Centrifuse.
CI—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
3/4—Three Quarters Floating.
1/2—Semi-Floating.
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
P—Parallel Torque Rods
T—Torque Arm.

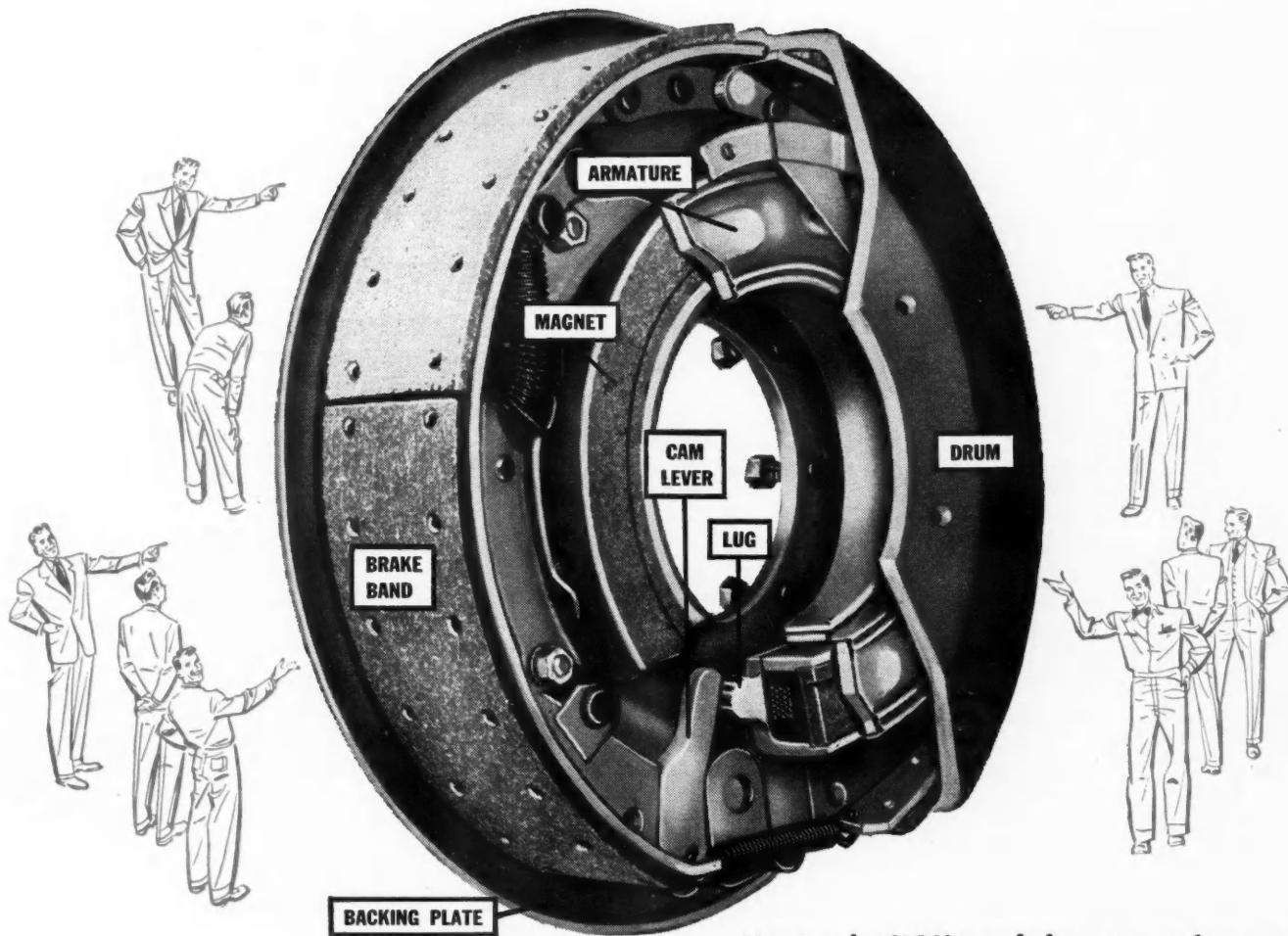
GOVERNOR STANDARD

Y—Yes.
N—No.

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL BASE	TIRE SIZES		ENGINE DETAILS			TRANSMISSION		REAR AXLE		FRONT AXLE		BRAKES		FRAME		
				D-dual rear	S-single rear	Model	Stroke	Displacement	Model	Stroke	Displacement	Model	Stroke	Displacement	Model	Stroke	Displacement	Model	Stroke
1 Available	123 (o.e.)	200	130	100	21000	Wau BM	6-3 1/2 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-30	325022H	TX	10-3x
2	225	130	100	21000	Wau BZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-30	325022H	TX	10-3x	
3	400	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-30	325022H	TX	10-3x	
4	500	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
5	550	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
6	550	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
7	550	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
8	600	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
9	600	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
10 (D) 602	602	130	100	21000	Wau MZ	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
11 Biederman	NSH	130	100	21000	Her JNLL	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
12	NSR	130	100	21000	Her JNLL	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
13	HL	130	100	21000	Her JNLL	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
14	HL	130	100	21000	Wau GK	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
15 Brown	B-5727	130	100	21000	Con R6572	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
16	B-5727	130	100	21000	Wau 140GK	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
17 (D)	B-5727	130	100	21000	Cum HB600	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
18 (D)	B-5727	130	100	21000	Cum HB600	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
19	B-5727	130	100	21000	Cum HB600	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
20 (D)	B-5727	130	100	21000	Cum HB600	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
21 (D)	B-5727	130	100	21000	Cum HB600	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
22 Chevrolet	HP	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
23	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
24	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
25	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
26	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
27	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
28	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
29	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
30	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
31	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
32	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
33	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
34	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
35	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
36	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
37	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
38	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
39	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
40	Fwd. Control	130	100	21000	HP	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
41	Carb. G-101B	130	100	21000	Con B6330	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
42	G-101B	130	100	21000	Con B6330	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
43	G-101B	130	100	21000	Con B6330	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
44	G-101B	130	100	21000	Con B6330	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
45	G-101B	130	100	21000	Con B6330	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
46	G-101B	130	100	21000	Con B6330	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
47	G-101T22	130	100	21000	Con B6427	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
48	G-102T22	130	100	21000	Con B6427	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
49	G-102T22	130	100	21000	Con B6427	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
50	G-102T22	130	100	21000	Con B6427	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
51	G-102T22	130	100	21000	Con B6427	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
52	D-291T22	130	100	21000	Her DX2X	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
53	D-291T22	130	100	21000	Her DX2X	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
54	D-601T22	130	100	21000	Her DRXC	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
55	D-601T22	130	100	21000	Her DRXC	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
56	D-601T22	130	100	21000	Her DRXC	6-4 x 4	283.5	9175	78-28000	H.F. H	H.F. H	H.F. H	H.F. H	**	6-33	325022H	TX	12-3x	
57	Crosley	B	80	2130	1330	8-4.50/12	80	...	2130	1330	8-4.50/12	447.8	32	26-5400	5-4	2	...		
58	Dodge	B-2-G	108	108	4850	...	6-00	1108	6-50/168	Own T-172	72	10-3x	TX	40	4-1				

Announcing A New 15" x 3"

WARNER ELECTRIC BRAKE of ADVANCED DESIGN



Will stop 8000 lbs. Axle Loads Using 7.50x20 Dual Tires, Provides 116 sq. inches of Working Lining.

This new powerful Warner Electric Brake of two shoe construction, incorporates the most advanced brake engineering — gives you an entirely new margin of safe, effective, stopping power. Fits 18" and 20" wheels on all types of trailers — semi, cargo, pole, logging, auto transport and utility. Rigid and rugged well beyond the axle loads and sizes for which recommended. And no brake but the Warner Electric Brake offers you the fast-acting, smooth controlled braking power — power developed within the brake itself — that this great new brake gives you. Warner Electric Brakes have been performance-proved by leading tractor-trailer operators during 23 years of efficient, dependable service. Standardize on Warner Electric Brakes in your fleet. Write for information on the full line.

WARNER ELECTRIC BRAKE & CLUTCH CO. • BELOIT, WIS.

Here's why **YOU** need the extra safety and protection only Warner Electric Brakes give!

Only two flexible wires required from truck battery to the brakes.

Sturdy cable connection from truck to trailer makes all electrical contacts.

Only Warner Electric Brakes offer complete synchronization with hydraulic or air-braked tractors.

"Vari-Load" dial on dash presets correct braking power.

There's nothing to get knocked-off, freeze, split or break . . . nothing to come loose, rattle and bang.



SINCE 1927

PLAY SAFE



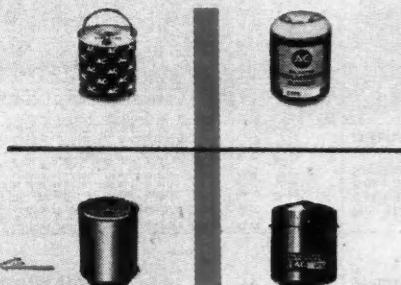
As long as there is a difference in oil filter elements, there will always be a difference in the ability of various elements to protect the engine.

AC Oil Filter Elements "Dirt-Proof" engine oil. Each type is engineered for the job it has to do—and is factory-tested to see that it does it.

Therefore, AC Oil Filter Elements prevent dirt and sludge from clogging rings or sticking valves—and keep grit from damaging moving parts.

AC builds an element designed especially for *your* oil filter—to keep oil "Dirt-Proof" throughout the life of the element.

If you want to play safe by giving your engine the utmost in protection—join the many fleet owners who choose AC Replacement Elements to "Dirt-Proof" engine oil.



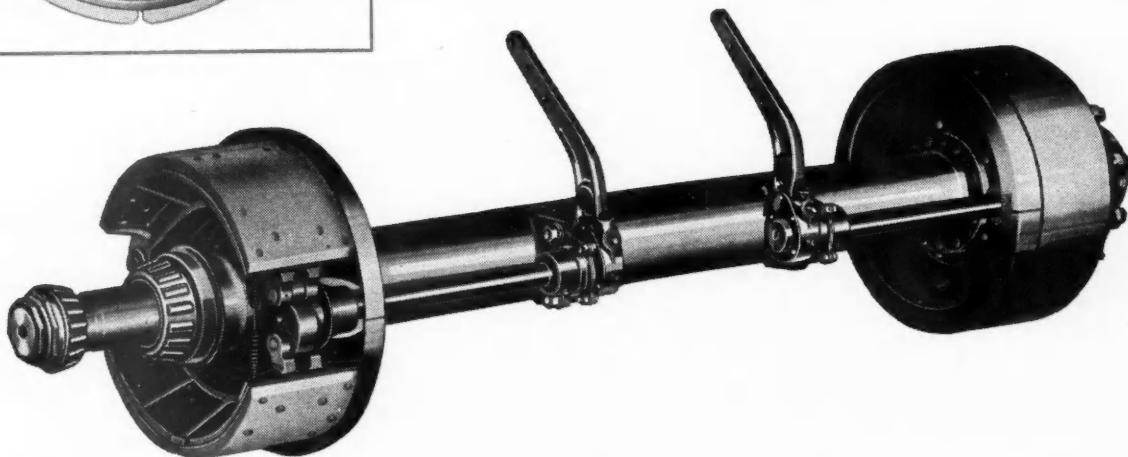
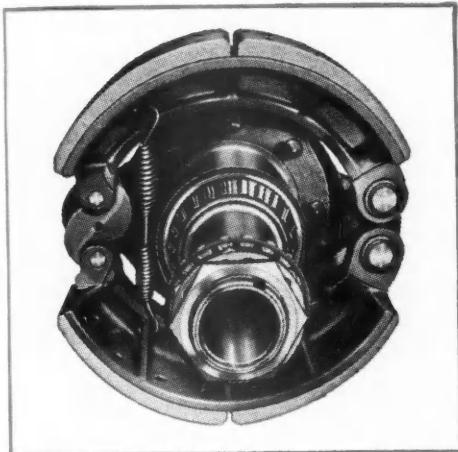
Dirt-Proof  
YOUR ENGINE OIL

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

Line Number	MAKE AND MODEL	WHEEL-BASE	TIRE SIZES D-dual rear S-single rear	ENGINE DETAILS			Front Axle	Rear Axle	TRANSMISSION			Service	Brakes	Frame				
				Model	Model	Model			Model and Type	Model and Type	Model and Type							
1	Ford, Continued	1120	6800	2849.7	1120	8.160	95-33004-2-87x5.0	Own 51Y	4 Own 8Y	4 Own 8Y	4 Own 8Y	4 Own 8Y	48.00/6.2	4x19 T				
2	Cow. 9HY-84	1122	6800	2889.7	1122	8.160	95-38003-2-49x5.2	Own 51Y	4 Own 8Y	4 Own 8Y	4 Own 8Y	4 Own 8Y	48.00/6.2	4x19 T				
3	F-3 Parcel Div.	104	7800	3030.7	104	8.160	95-33004-2-87x5.0	Own 8J	3 Own 8J	3 Own 8J	3 Own 8J	3 Own 8J	48.00/6.2	4x19 T				
4	W/B....., 9HJ	122	7800	3100.7	122	8.160	95-33004-2-87x5.0	Own 8J	3 Own 8J	3 Own 8J	3 Own 8J	3 Own 8J	48.00/6.2	4x19 T				
5	F-4	1175	134	16000	3477.0	1175	8.160	95-33004-2-87x5.0	Own 41T	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
6	Cow. 9HHT-84	1205	134	16000	3477.0	1205	8.160	95-33004-2-49x5.2	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
7	F-5	1220	134	16000	3477.0	1220	8.160	95-33004-2-87x5.0	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
8	Cow. 9HST-84	1220	134	16000	3477.0	1220	8.160	95-33004-2-87x5.0	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
9	Cow. 9HST-84	1220	134	16000	3477.0	1220	8.160	95-33004-2-87x5.0	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
10	Cow. 9HST-84	1220	134	16000	3477.0	1220	8.160	95-33004-2-87x5.0	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
11	Cow. 9HST-84	1220	134	16000	3477.0	1220	8.160	95-33004-2-87x5.0	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
12	Cow. 9HST-84	1220	134	16000	3477.0	1220	8.160	95-33004-2-87x5.0	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
13	F-5 CO. E	1220	134	16000	3477.0	1220	8.160	95-33004-2-87x5.0	Own 7RT	4 Own ST	4 Own ST	4 Own ST	4 Own ST	48.00/6.2	4x21 T			
14	Cab. 9HOW-81	1605	110	14000	4346.6	1605	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
15	Cab. 9HOW-81	1605	110	14000	4346.6	1605	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
16	Cab. 9HOW-81	1605	110	14000	4346.6	1605	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
17	Cab. 9HOW-81	1605	110	14000	4346.6	1605	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
18	Cab. 9HOW-81	1605	110	14000	4346.6	1605	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
19	F-5 School Bus	1315	158	12000	3755.6	1315	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
20	Cab. 9HST-84	1315	158	12000	3755.6	1315	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
21	Cab. 9HST-84	1315	158	12000	3755.6	1315	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
22	Cab. 9HST-84	1315	158	12000	3755.6	1315	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
23	F-6	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
24	Cow. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
25	Cab. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
26	Cab. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
27	Cab. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
28	Cab. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
29	Cab. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
30	Cab. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
31	Cab. 9HST-84	1610	134	16000	3980.7	1610	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
32	Cab. 9HOW-81	1690	110	16000	4589.7	1690	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
33	Cab. 9HOW-81	1690	110	16000	4589.7	1690	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
34	Cab. 9MOWH-81	2020	110	16000	4589.7	2020	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
35	Cab. 9MOWH-81	2020	110	16000	4589.7	2020	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
36	Cab. 9HOW-81	2020	110	16000	4589.7	2020	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
37	Cab. 9MWH-81	2020	110	16000	4589.7	2020	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
38	Cab. 9H-81	2020	110	16000	4589.7	2020	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
39	Cab. 9H-81	2020	110	16000	4589.7	2020	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
40	Cab. 9MWH-81	2122	158	16000	4577.0	2122	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
41	F-7	9HGT-84	2685	134	16000	5128.7	2685	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T		
42	Cow. 9HGT-84	2685	134	16000	5128.7	2685	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
43	Cow. 9HGT-84	2685	134	16000	5128.7	2685	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
44	Cow. 9HGT-84	2685	134	16000	5128.7	2685	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
45	Cow. 9HGT-84	2685	134	16000	5128.7	2685	8.180	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
46	F-8	9HGT-84	3155	135	16000	5934.9	3155	8.25/20/S	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T		
47	Cow. 9HGT-84	3155	135	16000	5934.9	3155	8.25/20/S	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
48	Cow. 9HGT-84	3155	135	16000	5934.9	3155	8.25/20/S	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
49	Cow. 9HGT-84	3155	135	16000	5934.9	3155	8.25/20/S	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
50	Cow. 9HGT-84	3155	135	16000	5934.9	3155	8.25/20/S	95-33004-2-87x5.0	Own 41T	4 Own 8T	4 Own 8T	4 Own 8T	4 Own 8T	48.00/6.2	4x21 T			
51	Freightliner (c.e.)... B-42	112	130	34000	11200	10.00/22	Cum. HRB	6-5/4x6	74313	540165-18007-4-1/2x16 1/2	Y Fu 1A86	8422501	TD	72			
52	Kenworth (D).....	112	130	34000	11200	10.00/20	11.00/22	Cum. HB6	6-4 1/2x6	672	17	500 150-18007-4-1/2x16 1/2	YBL 841	47221174	TD	74		
53	Kenworth (D).....	165	255	28000	12000	10.00/20	11.00/22	Wau 1A0GZ	6-4 1/2x5 1/2	672	17	500 150-18007-4-1/2x16 1/2	Y Fu 56550	74221174	TD	74		
54	Linn. A-15	120	165	255	28000	12000	10.00/20	11.00/22	Wau 1A0GZ	6-4 1/2x6	672	17	500 150-18007-4-1/2x16 1/2	Y Fu 56550	74221174	TD	74
55	Linn. A-15	165	165	255	28000	12000	10.00/20	11.00/22	Wau 1A0GZ	6-4 1/2x6	672	17	500 150-18007-4-1/2x16 1/2	Y Fu 56550	74221174	TD	74
56	Linn. A-15	165	165	255	28000	12000	10.00/20	11.00/22	Wau 1A0GZ	6-4 1/2x6	672	17	500 150-18007-4-1/2x16 1/2	Y Fu 56550	74221174	TD	74
57	Linn. A-15	165	165	255	28000	12000	10.00/20	11.00/22	Wau 1A0GZ	6-4 1/2x6	672</						

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"P" Series Brakes— "The Accepted Standard" for Trailers!



A TRUE HEAVY-DUTY BRAKE ORIGINALLY DESIGNED FOR TRAILERS

- 16½"-diameter brake allows passage of cooling air over brake drums when used with 20"-base-diameter wheels.
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- Dust shields are available for brake spiders—when closure against bad road conditions is preferred.
- Timken-Detroit brake drums are made of special high-carbon iron and accurately finished for maximum braking and mileage life.
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- Straddle-mounted brake shoes

are of truss-design for maximum rigidity of the shoe and for a steadier mounting on anchor pins.

- Cam shaft mounted in antifriction bearings at both ends.
- Cam head (constant lift) forged integral with large-diameter cam shaft for resistance to deflection or torsion.
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- Anchor pins are sealed against foreign matter.
- Cam head coin-pressed for accuracy, smooth surface and resistance to wear.
- The first brake designed specifically for trailer use—has long been "The Accepted Standard."

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- ▲ Two speed axle assembly
- ▲ Two speed transmission

(Turn to Page 90. Please)

♦ Rear only; Front 12.00/24.
♦ Auxiliary transmission Own FJ.

!—Model 288 engine can be furnished.
!—Model 310 engine can be furnished.

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Continued from Page 88)

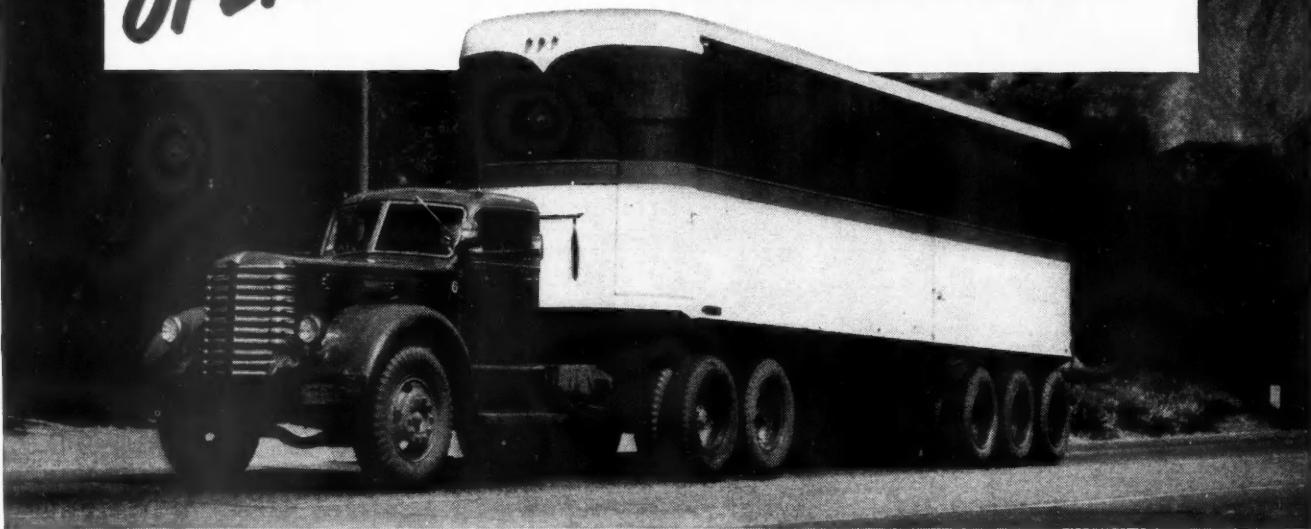
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complete vehicle with pick-up type body.

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**Banish Fuel Waste
and Power Loss**



A NEW, QUICK AND EFFECTIVE ENGINE MAINTENANCE PROGRAM!

Results are scientifically checked!

HERE'S HOW IT WORKS. First the crankcases of all fleet units are drained. Then the Cities Service internal engine cleanser, Cisco Solvent, is used to flush out harmful sludge, dirt and power-robbing deposits. The crankcase is then refilled with the correct type and grade of Cities Service motor oil. Next comes the Cities Service Power Prover test. This remarkable instrument is an exhaust gas analyzer. It quickly and accurately determines the exact combustion efficiency of any four cycle gasoline engine. With this information, necessary adjustments can be made easily.

Results are Fast!

From then on, all drivers are alerted to oil contamination. The proper oil change period is set up for each unit in the fleet depending upon the age, operating conditions and rate of oil consumption. The Cisco Solvent treatments are repeated after every second oil change. The Power Prover tests are made at scheduled intervals between oil changes to detect combustion changes before they can do any damage.

This Cities Service "clean engine" maintenance program has shown lower operating costs per mile

... lower gasoline consumption and reduced maintenance and repair expense.

A Cities Service representative will be glad to put this program in operation on your fleet (in all Cities Service marketing territories east of the Rockies). Talk to the Cities Service representative nearest you.

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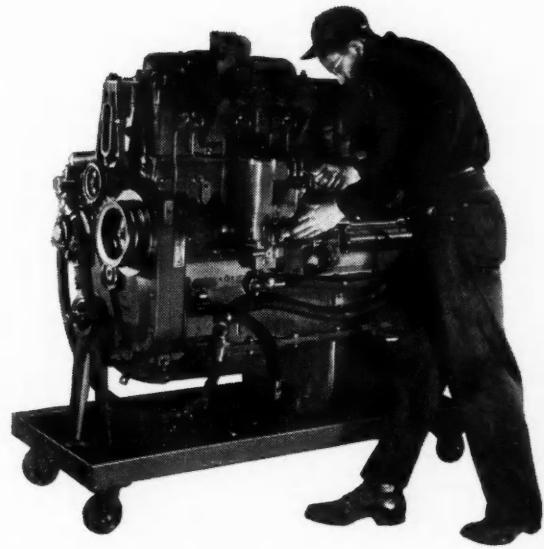
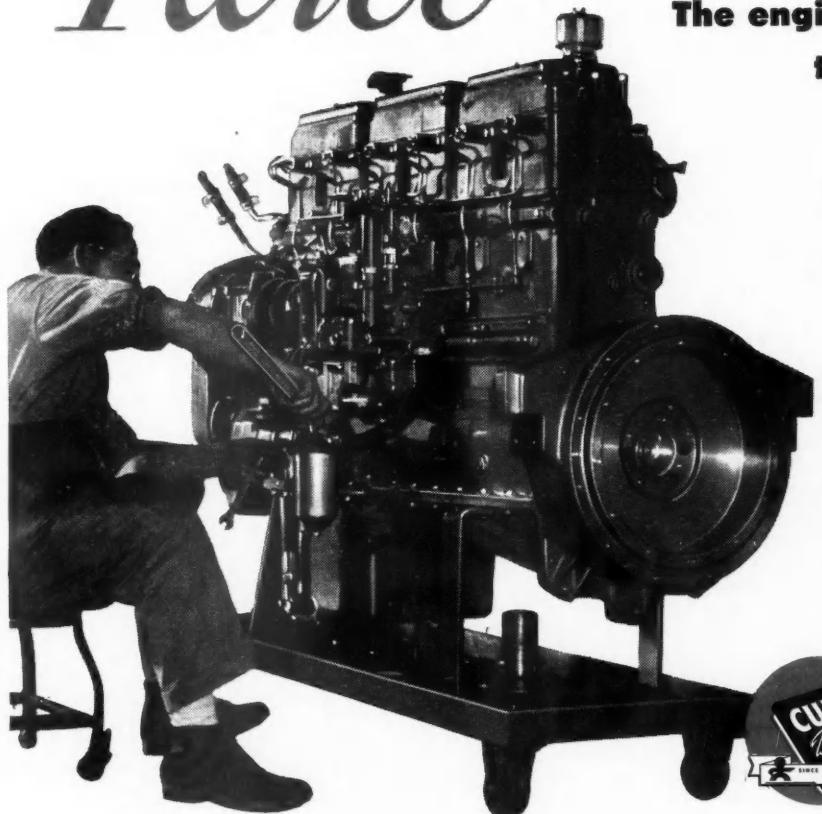


Line Number	Make and Model	Wheel-Base	Tire Sizes				Engine Details				Transmission				Front Axle		Brakes		Frame	
			D-dual rear	S-singe rear	Standard and	Maximum	Maximum	Standard and	Maximum	Maximum	Standard and	Forward Speeds	Overdrive	Reardriven	Front Axle	Service	Brakes	Front Axle	Brakes	Frame
1 Sterling (D) DD115	160	178	32000	11500	11.00/20	11.00/24	Wau 6SRKR	6-4-56-554	5175.5	5185	Y Fu 5A28*	107 Tim 1357W	1.4F	H 6.23-8	6 Tim F310W	W64IA	6-11	984	TX	76
2 (D) DD14H	167	185	36000	11500	11.00/20	12.00/24	Cum B6H60	6-4-56-556	125-1300	125-1300	Y Fu 5A28*	107 Tim 1357W	1.4F	H 6.23-9	6 Tim F30W	W64IA	6-11	984	TX	77
3 Walter (e.f.) FZM	126	150	24000	9000	12.00/20	12.00/24	Wau MZA	6-4-54-544	4015.5	6200	Y Own F1N	6 Tim M5	2	H ***	-8 Tim F30W	W64IA	6-11	923	TX	76
4 (e.f.) AEB	136	150	13000	13000	12.00/20	12.00/24	Wau 140-Z	6-4-54-553	5200	7250	Y Own F1C	6 Tim M5	2	H ***	-9 Tim F30W	W64IA	6-11	943	TX	76
5 (e.f.) AGB	138	162	32000	13000	12.00/20	12.00/24	Wau 145ZK	6-4-54-553	7766.5	7510	Y Own F1C	6 Tim M5	2	H ***	-9 Tim F30W	W64IA	6-11	943	TX	76
6 (e.f.) AGR	138	162	42000	13000	12.00/20	12.00/24	Wau 145ZK	6-4-54-553	7766.5	7510	Y Own F1A	6 Tim M5	2	H ***	-9 Tim F30W	W64IA	6-11	943	TX	76
7 Ward La Fr. FD1	119	118	36000	11500	11.00/22	11.00/24	Cont 6H13	6-4-55-554	5132.5	9405.5	Y Fu 5A620	5 Tim B462W	S2	R ***	-8.15 Tim F310W	BWIA	6271029 Co	PM	103x8	
8 (D) La Fr. FD2	119	118	36000	12000	11.00/22	11.00/24	Cum B6H60	6-4-55-556	5132.5	9405.5	Y Fu 5A620	5 Tim B462W	S2	R ***	-8.15 Tim F310W	BWIA	6271029 Co	PM	103x8	
9 Willys Jp. CJ-3A	119*	80	3700	*106	1068	7.0-0	Own CJ-3A	4-316-43	1316.5	1316.5	Y Fu 5A920	5 Tim B462W	S2	R ***	-8.15 Tim F310W	BWIA	6271029 Co	PM	103x8	
10 Willys Jp. CJ-3A	1397*	118	3300	*3115	7.00	1068	7.0-0	Own CJ-3A	4-316-43	1317.5	1317.5	Y Fu 5A920	5 Tim B462W	S2	R ***	-8.15 Tim F310W	BWIA	6271029 Co	PM	103x8
Six-Wheelers ▶																				
11 Corbilli	160	190	40000	12000	10.00/20	10.00/24	Con B6427	6-4-54-556	125-1300	125-1300	Y Fu 5A28*	5 Tim 1055	54F	L 1.57-7	40 Tim 3600	W66IA	7-31	1058.5	TX	88
12 G302B34-4R	173	208	30000	12000	10.00/20	12.00/24	Cum B6H60	6-4-54-556	125-1300	125-1300	Y Fu 5A28*	5 Tim 1055	54F	L 1.57-7	40 Tim 3600	W66IA	8-11	1058.5	TX	88
13 G40B34-4R	173	208	40000	12000	10.00/20	12.00/24	Cum B6H60	6-4-54-556	125-1300	125-1300	Y Fu 5A28*	5 Tim 1055	54F	L 1.57-7	40 Tim 3600	W66IA	8-11	1058.5	TX	88
14 (D) D805046-2C	172	208	40000	12000	10.00/20	12.00/24	Cum B6H60	6-4-54-556	125-1300	125-1300	Y Fu 5A28*	5 Tim 1055	54F	L 1.57-7	40 Tim 3600	W66IA	8-11	1058.5	TX	88
15 (D) D802R46-4R	188	208	46000	12000	10.00/20	12.00/24	Cum B6H60	6-4-54-556	125-1300	125-1300	Y Fu 5A28*	5 Tim 1055	54F	L 1.57-7	40 Tim 3600	W66IA	8-11	1058.5	TX	88
16 Dodge B2-XXL, B2VX-	154	190	34000	12000	10.00/20	10.00/24	Own T159	6-34-545	3316.5	5270.128	Y NG 88460	5 Tim 1055	54F	L 1.57-7	40 Tim 3600	W66IA	7-31	1058.5	TX	88
17 B2VXL, B2VX-	154	190	40000	12000	10.00/20	10.00/24	Own T199	6-34-545	3316.5	5270.128	Y NG 88460	5 Tim 1055	54F	L 1.57-7	40 Tim 3600	W66IA	7-31	1058.5	TX	88
18 Duplex	162	173	34500	12000	8.25/20	9.00/20	Her JXD	6-44-54	3206.5	2240.113	Y Fu 5B32*	107 Tim 8202H	BF	L 6.8-16	16 Tim F3250H	W66IA	513	839	A	TX
19 (D) TH6	172	208	32000	12000	8.25/20	9.00/20	Her WXLCS	6-4-54-544	3206.5	2240.113	Y Fu 5B32*	107 Tim 8202H	BF	L 6.8-16	16 Tim F3250H	W66IA	1075	1252	A	TX
20 (D) L6	172	208	40000	12000	8.25/20	9.00/20	Her WXLCS	6-4-54-544	3206.5	2240.113	Y Fu 5B32*	107 Tim 8202H	BF	L 6.8-16	16 Tim F3250H	W66IA	1075	1252	A	TX
21 Federal	179	225	42000	14500	10.00/20	10.00/24	Con F66020	6-4-55-543	602	466	Y Fu 5A65*	15 Tim SW3012P*	WF	R ***	-6 Tim F310W	W66IA	1082	1689.5	TD	108
22 663AMB	179	225	60000	14500	10.00/20	12.00/24	Con F66020	6-4-55-543	602	466	Y Fu 5A65*	15 Tim SW3012P*	WF	R ***	-6 Tim F310W	W66IA	1082	1689.5	TD	108
23 664AMB	179	225	60000	14500	10.00/20	12.00/24	Con F66020	6-4-55-543	602	466	Y Fu 5A65*	15 Tim SW3012P*	WF	R ***	-6 Tim F310W	W66IA	1082	1689.5	TD	108
24 629ML	163	199	33000	8635.5	25.25/20	9.00/20	Her JXDF	6-4-54-544	3209.5	272.131	Y CB 205V4*	12 Tim SW3012P*	WF	R ***	-6 Tim F310W	W66IA	841	913.5	TD	108
25 629ML	163	199	33000	8635.5	25.25/20	9.00/20	Her JXDF	6-4-54-544	3209.5	272.131	Y CB 205V4*	12 Tim SW3012P*	WF	R ***	-6 Tim F310W	W66IA	841	913.5	TD	108
26 632M	167	203	38000	12000	10.00/20	10.00/24	Con T642711*	6-4-54-544	3277	347.155	2600	12 Tim SW3012P*	WF	R ***	-6 Tim F310W	W66IA	1075	1252	TD	108
27 643M	167	203	40000	12000	10.00/20	10.00/24	Con T642711*	6-4-54-544	3277	347.155	2600	12 Tim SW3012P*	WF	R ***	-6 Tim F310W	W66IA	1075	1252	TD	108
28 Freightliner (e.e.) A64	176	176	54000	*14000	10.00/22	12.00/24	Cum NHB	6-5-1/2x6	743.13	1575.200	Y Fu 4B86*	12 Tim	WF	H 6.6-8	-20 Tim 27061	OARIA	966	1450.5	TD	136
29 F.W.D. H6366G	160	176	12020	10.00/20	10.00/24	Wau MZA	Op. Opt.	1200	1200	Y Own H	10 Own H	SE	H ***	-7.45 Tim F30W	L6IHV	647	1281.5	C	CC	
30 M.616XBC	160	176	12000	10.00/20	10.00/24	Wau MZA	Op. Opt.	1200	1200	Y Own H	10 Own H	SE	H ***	-7.45 Tim F30W	L6IHV	726	1453.5	C	CC	
31 M.606C	160	176	12000	10.00/20	10.00/24	Wau MZA	Op. Opt.	1200	1200	Y Own H	10 Own H	SE	H ***	-7.45 Tim F30W	L6IHV	1050	1680.5	B	CC	
32 M.616D	160	176	12000	10.00/20	10.00/24	Wau MZA	Op. Opt.	1200	1200	Y Own H	10 Own H	SE	H ***	-7.45 Tim F30W	L6IHV	1050	1680.5	B	CC	
33 (D) M.620D	160	176	12000	10.00/20	10.00/24	Wau MZA	Op. Opt.	1200	1200	Y Own H	10 Own H	SE	H ***	-7.45 Tim F30W	L6IHV	1050	1680.5	B	CC	
34 Kenworth (D) 522	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
35 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
36 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
37 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
38 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
39 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
40 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
41 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
42 (D) 522-4R	191	255	42000	19000	10.00/20	11.00/24	Cum HB6	6-4-56-546	6721.7	5001.50-1800	Y BL 2241	4 Tim SW460P*	WF	L 5.67-8	-20 Tim F30W	W66IA	868	1385.5	TD	100
43 Marion-Herr. R-6	156	22500	43500	5200	7.50/20	7.50/20	Ford	6-3-53	22500	18200	Y Fu 5A650	10 Tim SFD450	2F	H ***	-6.67 Tim	F-H	503	836.5	C	CC
44 (C) R-6	180	22500	43500	5200	7.50/20	7.50/20	Ford	6-3-53	22500	18200	Y Fu 5A650	10 Tim SFD450	2F	H ***	-6.67 Tim	F-H	503	836.5	C	CC
45 (C) MH40-6	182	34000	42000	11.00/20	10.00/20	Her WXLCS	6-4-54-544	34000	11.00/20	Y Fu 5A650	10 Tim SFD450	2F	H ***	-6.67 Tim	F-H	503	836.5	C	CC	
46 (C) R-50E	182	34000																		

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not
once
but*

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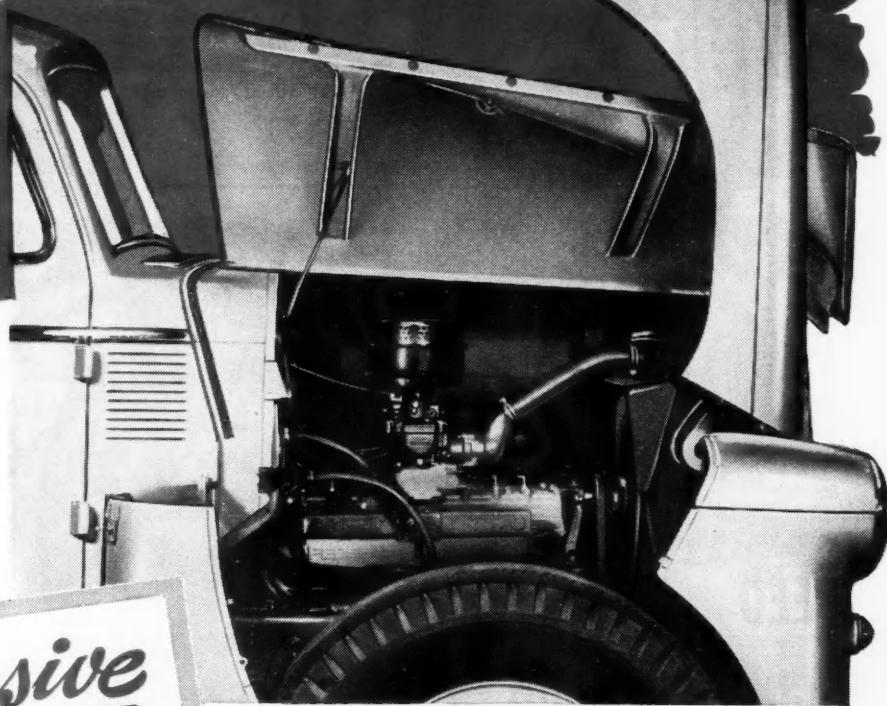
Line Number	MAKE AND MODEL	Chassis List Price	WHEEL BASE	TIRE SIZES		ENGINE DETAILS				TRANSMISSION		REAR AXLE		FRONT AXLE		BRAKES		FRAME	
				Dual rear Single rear	Single rear	Main Bearings	Cam Shaft	Diaphragm Shaft	Diaphragm Shaft	Model and Powerード Speeds									
1	Oshkosh, Cont. 1(D).....W1600BG	60000	22770	11/00/24	12/00/24	Y FU 4B186	12 Tim SD462	2F	H	**	-0.82	Own-Tim	1080/1625G	Opt	Opt	Opt	Opt	Opt	Opt
2	1(D).....W1600L9	60000	23000	11/00/24	12/00/24	Y FU 4B186	12 Tim SD462	2F	H	**	-0.84	Own-Tim	1080/1625G	Opt	Opt	Opt	Opt	Opt	Opt
3	1(D).....W1600D9	60000	23000	11/00/24	12/00/24	Y FU 4B186	12 Tim SD462	2F	H	**	-0.82	Own-Tim	1080/1625G	Opt	Opt	Opt	Opt	Opt	Opt
4	1(D).....W1600CD9H	60000	24500	11/00/24	12/00/24	Y FU 4B186	12 Tim SD462	2F	H	**	-0.82	Own-Tim	1080/1625G	Opt	Opt	Opt	Opt	Opt	Opt
5	1(D).....W1600CDSH	60000	24500	11/00/24	12/00/24	Y FU 4B186	12 Tim SD462	2F	H	**	-0.84	Own-Tim	1080/1625G	Opt	Opt	Opt	Opt	Opt	Opt
6	Peterbilt 7	350	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-8.5	Tim F500DPA	W661A	1125/1569	TD	99/15
7	7(D).....E260	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	104/1517	TD	104/15	
8	7(D).....E270	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
9	9(D).....E280	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
10	10(D).....E290	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
11	Reo.....E216	193	42000	10/00/22	Cum HB600	6-3-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
12	12(D).....E226	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
13	13(D).....E236	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
14	14(D).....E306	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
15	15(D).....E316	193	42000	10/00/22	Cum HB600	6-4-16X	672/17	500/150-1800/7	4-16X/7	Y SpI 8041	12 Tim SW3012W	WF	R 6.04-10.2	Tim F500DPA	W661A	108/1626	TD	104/15	
16	Sterling 17	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-13.14	T-35011H	T61HV	664/1134	A
17	17(D).....HW810	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1154	A
18	18(D).....HW825	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1174	A
19	19(D).....HW835	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1194	A
20	20(D).....HW845	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1214	A
21	21(D).....HW855	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1234	A
22	22(D).....HW865	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1254	A
23	23(D).....HW875	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1274	A
24	24(D).....HW885	193	42000	10/00/20	10/00/30	Wau 6M1ZA	6-4-16X	40/5	672/90	130-3000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1294	A
25	25(D).....HCS330	193	42000	10/00/20	10/00/30	Wau 145CK	6-5-16X	779/6	180-2000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1314	A	
26	26(D).....HCS350	193	42000	10/00/20	10/00/30	Wau 145CK	6-5-16X	779/6	180-2000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1334	A	
27	27(D).....HCS365H	193	42000	10/00/20	10/00/30	Wau 145CK	6-5-16X	779/6	180-2000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1354	A	
28	28(D).....HCS397H	193	42000	10/00/20	10/00/30	Wau 145CK	6-5-16X	779/6	180-2000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1374	A	
29	29(D).....HC8330H	193	42000	10/00/20	10/00/30	Wau 145CK	6-5-16X	779/6	180-2000/7	2-16X/12X	Y FU 5A43	5-T-SBD1055 SF	SP	16.80-14.22	T-35011H	T61HV	664/1394	A	
30	Truckell 31	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
31	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
32	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
33	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
34	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
35	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
36	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
37	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
38	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
39	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
40	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
41	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
42	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
43	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
44	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
45	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
46	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
47	(C)F239-00002F	193	28000	11/00/20	12/00/20	Ford	8-3-28	230/6	81-180/100	3-40X4	9 N Ford	4 Ford	SP	502/835	o	F61HV	502/835	o	
48	(C)F239-00002F	193	28000	11/00/20	12/00/														

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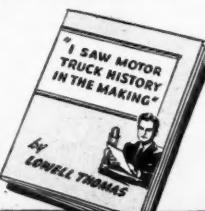
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INTRODUCING . . .

CURT MUSER, district manager for U. S. Tires at San Francisco. CLIFFORD H. SHIRLEY, who has been with the advertising department of U. S. rubber since 1944, will succeed Muser as manager of advertising and sales promotion.



HARRY A. LAGEMAN, formerly manager of Trailmobile distributor sales with headquarters in Cincinnati, named Eastern district sales manager for The Trailmobile Co. He will be located in New York City. RIGHT: JOSEPH B. KLECKNER, of Batavia, Ohio, appointed manager of the Trailmobile factory branch in Long Island City, N. Y.

MILTON D. KRAMER, as assistant to the President, Associated Transport, Inc., New York, N. Y. He was formerly assistant director, Center of Safety Education, New York University.

CARL G. SEASHORE, as advisor to the president, Dan Dugan Oil Transport Co., Sioux Falls, S. D. For many years he had been with the Institute of Public Safety, Pennsylvania State College.

JOHN E. BENDURE, Diamond T Motor Car Co.'s new chief body engineer. He formerly held the same post at Federal Motor Truck Co.

Organization changes in the Tire Div. of the United States Rubber Co. are: H. R. MACK, appointed field manager of sales with headquarters in New York; J. S. BERRY, succeeds Mack as manager of truck tire sales with offices in New York; W. B. SWARTZ, moves up to Berry's former position as district manager, U. S. Tires at St. Louis; C. R. SCHLICHTER, appointed manager of farm market sales with headquarters in New York; H. R. IRWIN, who started with U. S. Rubber as a farm tire representative, returns to Des Moines as assistant manager, farm market sales.



JOHN T. SPENCE, district manager of World Bestos' sales territory, including Ark., La., Miss., and So. Ala.

MAURICE N. TRAINER, first vice president of American Brake Shoe Co., elected president of the company. WILLIAM B. GIVEN, Jr., president for 21 years, was elected chairman of the board.

Vulcan Rubber Products, Inc., Brooklyn, N. Y., announces THOMAS H. McCONNELL, Jr., sales promotion and advertising manager of the company, in charge of all new business.

(TURN TO PAGE 98, PLEASE)

SPEED ENGINE OVERHAUL with 3-way *Oakite Steam-Detergent Cleaning*



Here's parts cleaning reduced to its easiest terms and new low cost. Specialized Oakite detergents, applied with the Oakite No. 481 Solution-Lifting Steam Gun, fuse heat, force, and cleaning power to blast off sludge and grease three ways at once.

And the Oakite No. 481 gun makes block and transmission cleaning a short-time job. Easy to rotate, the gun gets into, around, over and under all hard-to-reach recessed areas. Entire gun assembly swings with the rotating nozzle, to prevent twisting of hose lines. For safety, gun has reinforced rubber apron to protect operator from heat of steam hose.

Let your neighborhood Oakite Technical Service Representative give you on-the-spot demonstration. Or send for booklet.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
TRADE MARK REG. U. S. PAT. OFF
MATERIALS • METHODS • SERVICE

OAKITE PRODUCTS, INC., 52F THAMES ST., NEW YORK 6, N. Y.
Technical Service Representatives in Principal Cities of U. S. & Canada

Free illustrated booklet gives details on Oakite Steam-Detergent cleaning. Tells how to save money on all service shop cleaning jobs. Send today!

**Fleet Operators
HERE'S 4 BIG REASONS WHY**

**GENUINE FORD
PISTON RINGS**



OIL RING

- A. Steel Section
- B. Cast Iron Oil Ring
- C. Steel Section
- D. Inner Ring or Expander

B



Yes, here are 4 good reasons why it pays you to get Genuine Ford Piston Rings.

- 1 Right for Fords**—Like all Genuine Ford Parts, real Ford replacement rings save you time, money and trouble—they're made right to fit right and last longer.
- 2 "Double Life" oil ring**—Only the soft cast iron section contacts cylinder wall during break-in. Then in the "second life," the exclusive expander with 14 points of contact (twice the usual number) gives positive oil control at low pressure. This "Double Life" principle assures maximum power, quiet performance and longer life.
- 3 Top quality**—Every Genuine Ford Ring is precision-built with highest quality metal

**Give You
Greater
Savings**

**For Longer Life
14 STABILIZING
POINTS WHEN
INSTALLED!**

selected for strength and resistance to high temperature to assure longer, dependable life.

- 4 Lower cost**—With all its top quality—with its exclusive "Double Life" feature—Genuine Ford Piston Rings list as low as *half* the cost of other makes. And that means real savings for you!

For extra thousands of profitable miles, re-ring your high mileage Fords now, with Genuine Ford Piston Rings.



Available wherever
you see this sign at
all Ford Dealers and
selected independent
garages.

FORD DIVISION OF FORD MOTOR COMPANY

Introducing . . .

Continued from Page 96

... K. A. LORD, named manager of the eastern districts of the Bendix automotive service sales organization for Bendix Products Div., Bendix Aviation Corp., at South Bend, Ind. Mr. Lord has announced the appointment of P. A. HEBER southeastern zone manager and the establishment of H. C. SMITH as a field representative with headquarters in Richmond, Va.

... T. A. CRAWFORD, elected vice-president of The Timken-Detroit Axle Co. Crawford will continue as general manager of the Timken Silent Automatic Div.



... JAMES A. COOPER, appointed manager of field sales for Koroseal upholstery materials for the plastics division of The B. F. Goodrich Co.

... EDWARD D. ROLLERT, former General Motors executive at Bristol, Conn., and Flint, Mich., appointed as assistant to the general manager of the Buick-Oldsmobile-Pontiac Assembly Div. of General Motors to handle special defense assignments.

... CLAUDE L. YOUNG, Pittsburgh branch manager of the Highway Trailer Co.

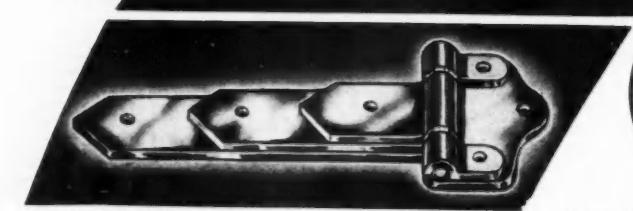
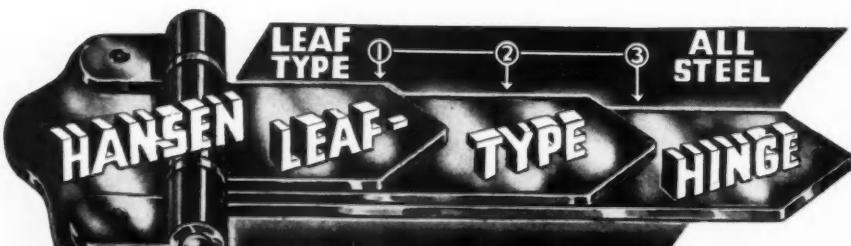
... JOHN LUNDAHL, appointed to newly created position of sales representative-at-large by the Detroit Diesel Engine Div. of General Motors Corp.

... V. K. GASTON, director of sales, and R. H. STEVENS, sales manager for Galion Allsteel Body Co., a division of Central Ohio Steel Products, Galion, Ohio.

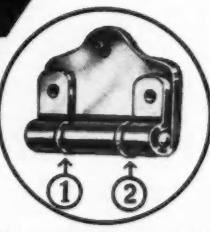
... HARRY J. NOZESKY, named vice-president in charge of sales for the Bowers Battery & Spark Plug Co. of Reading, Pa.

... C. R. GEYER, transferred from New Orleans to Detroit as district representative for the Auto-Lite Battery Corp. Mr. Geyer replaces M. J. BARBER, who was promoted to division manager in Atlanta. P. G. BARNES, JR., of New Orleans, has been named district representative in the New Orleans area, replacing Mr. Geyer.

Unbreakable!



No. 19 Leaf-Type Hinge. 3-ply, 20" strap, 2 1/4" wide. All-steel. Plain, cadmium or chromium. Wt. 7 lbs.



Arrows (1) and (2), inset, point to hardened steel thrust bearings. These add strength; resist wear.

HANSEN Leaf-Type Hinges are made of hard-rolled steel. Strong, durable, attractive, they support the heaviest commercial body doors—and give lasting service.

Hardened Steel Thrust Bearings and Bolt

To give added strength and durability, Hansen Leaf-Type Hinges are fitted with hardened steel thrust bearings. (See inset above.) These bearings provide solidly supported doors and insure easier opening and closing.

Leaf-Type All-Steel Insures Greater Strength

Greater strength is provided by leaf-type construction, which gives greatest strength at base where most needed. Arrows at top point to unique leaf-type design. Leaves are spot-welded.

Hinges Available in Various Types

Hansen Leaf-Type All-Steel Hinges are available in 8", 12", 16", and 20" lengths—chromium, cadmium or plain finish. Brass Hinges, leaf-type, can be supplied in 6", 8" and 12" lengths. Also, round-corner, square-corner and continuous types.

No. 16 Leaf-Type Hinge. 3-ply, 16" strap, 2 1/4" wide. All-steel. Plain, cadmium or chromium. Wt. 5 3/4 lbs.



No. 12 Leaf-Type Hinge. 3-ply, 12" strap, 2 1/4" wide. All-steel. Plain, cadmium or chromium. Wt. 4 lbs.



No. 6 Leaf-Type Hinge. 8" strap, 1 3/4" wide. All-steel. Plain, cadmium or chromium. Wt. 2 1/2 lbs.

WRITE FOR CATALOG WITH COMPLETE INFORMATION.



A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE., CHICAGO 40, ILL.

... THOMAS L. CROIN, president of the newly formed Capital Freight Lines, Inc., Columbus, O. Mr. Cronin was formerly president of the C. F. & Lines, Inc.



... RONALD D. SIMPSON, vice-president and general manager of Capital Freight Lines, was formerly the vice-president of Capital Cartage, Inc.



... J. E. SIMPSON, secretary-treasurer and chairman of the board of Capital Freight Lines, Inc., formed by the merger of C. F. & L. Lines and Capital Cartage.



... L. W. MADERY, appointed district manager of International Harvester Co.'s motor truck sales district office in Detroit. He succeeds G. B. ABBOTT, who retired as district manager after more than 38 years' service with the company. J. E. DAVIS will be Madery's assistant district manager.

... DON NELSON, appointed sales manager for the Tuthill Spring Co., Chicago, Ill., to supervise their Replacement Spring Div.

COMMERCIAL CAR JOURNAL, October, 1950

Truck Owners!

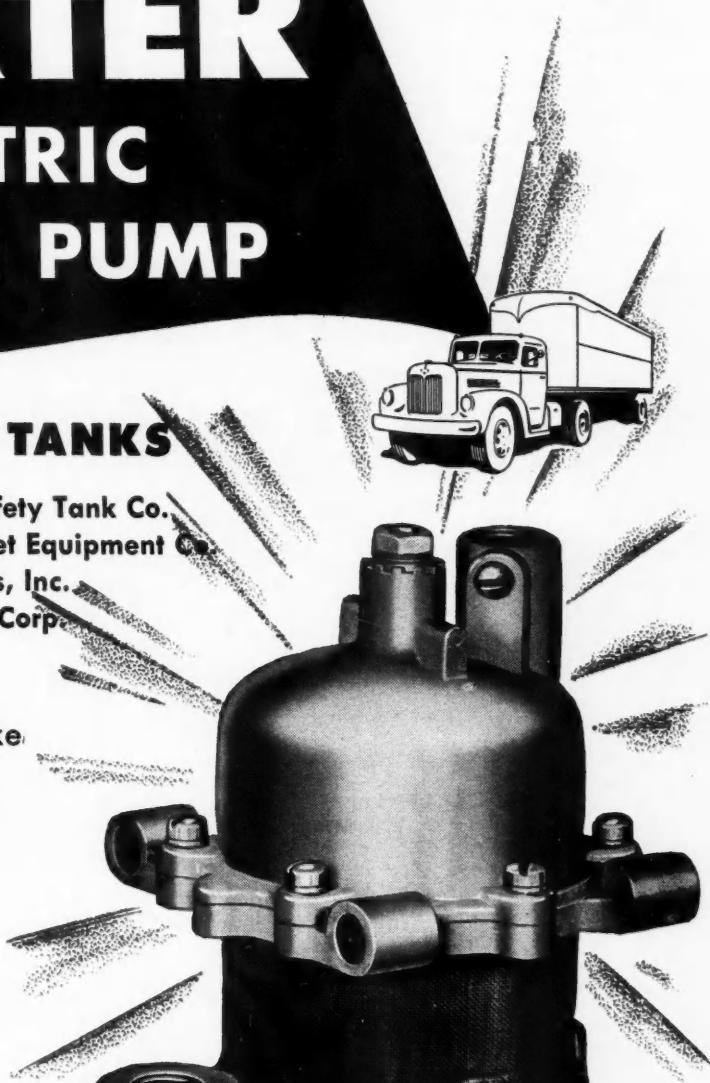
The **CARTER**
ELECTRIC
PUSHER PUMP

is available in **SAFETY TANKS**

Made by: American Safety Tank Co.
Michigan Fleet Equipment Co.
Prior Products, Inc.
Snyder Tank Corp.

These Safety Tank manufacturers make fitted tanks to receive the Carter Electric Pusher Pump. This means quicker and easier installation.

The Carter Electric Pusher Pump is used as standard equipment on most leading gasoline powered buses and on thousands of trucks throughout the country.



Conversion Kits are available for all side mount tanks. Investigate the possibilities of conversion now.

**END VAPOR LOCK
CUT MAINTENANCE COST
END ROAD FAILURES**



CARBURETER
TRADE MARK REG. U. S. PAT. OFF. MARCA REGISTRADA

CARTER CARBURETOR CORPORATION

Division of American Car and Foundry Company

Saint Louis 7, Missouri

Dairy's Branch Garage . . .

Continued from Page 54

used for the storage of fenders, radiators and other larger items. Similarly, the top of the locker-rooms is also balconied and can be used for storage, when wanted.

Heat for the garage is supplied from an oil-burning plant, which draws fuel from an 8000-gal storage tank buried in the ground outside. The garage is heated by fan-type heaters suspended

from the ceiling I-beams. Additional heat is supplied the repair bays by radiant heating buried in the floor. However, mechanics seldom lay on the floor here since the repair bays are equipped with three hoists.

Water and Air in Storage Area

ALL of the 111 vehicles can be stored in the storage area, with some 78

of them capable of being stacked in double rows along the walls and the others occupying the center sections of the floor.

Storage has been simplified because parking is simply a matter of straight-away driving for, apart from the six posts found at widely-spaced intervals, three to each side of the storage area, the floor is entirely clear. Inflating tires and putting water in "rads" is easy, for each of these posts is equipped with a compressed-air outlet and a water outlet. The compressed-air outlets are equipped with special couplers, allowing for the quick and easy attachment of air-hoses which are carried by the mechanics over their shoulders. Posts are painted a vivid yellow as a safety precaution.

The storage area is marked off into divisions each planned to hold 10 vehicles, and each division is identified by an overhead sign. This sign lists the trucks to be parked here, as well as listing the number of trucks to be parked in each area. In other words, the same truck parks in the same space all of the time. This plan makes it easy to find any given truck when wanted. A master sheet of the parking plan is kept in the superintendent's office at all times.

When parking, the first man in parks to the left rear, and this plan of procedure is followed until the parking area is completely filled. By parking to the left the driver following the first driver always finds the previously parked truck on his left. This makes it easy for him to see and avoid crashes.

There is another feature in the parking area which is going to void much potential damage to body and fenders. These are the foot-high wooden bumpers which have been set into the floor and at the rear of all parking areas. These bumpers stop all trucks before they can back into the wall. The storage department is supplied with fluorescent lighting, which is also installed throughout the entire garage. But large windows also admit floods of natural illumination throughout the day.

The garage is equipped with an outside pumping island for fueling vehicles. Here an attendant keeps all gas and oil records throughout the day.

West Branch garage was designed to give adequate service to a fleet working far from the central down-town garages. After a year of experience, we have found that the main design objective has been reached. Truck movement never interferes with work and work does not interfere with movement.

END

Please resume your reading on P. 55

COMMERCIAL CAR JOURNAL, October, 1950

NEW ARROW

STOP

OR EMERGENCY WARNING LIGHTS



Model No. N-470, Flush-Mounted Emergency Light

Model No. N-470-1, Bracket-Mounted Emergency Light

Model No. N-470-5, Double-Face Bracket-Mounted Emergency Light

Real stoppers, these!

Big and bright, they're perfect for emergency vehicles . . . fire apparatus, police cars, snowplows. Like all Arrow *safety after dark* equipment, they're dependable . . . built for long, trouble-free performance.

Reflecting surfaces are plated and highly polished. Rims and bases are finished with baked-on enamel over bonderized steel. Effective lens diameter is 6 1/8"; lettering is 3/8" x 2". 21 candlepower bulbs furnished with all models. Lenses are available in red, amber and blue, with or without the word STOP.

See your jobber salesman today about Arrow Emergency Lights and Arrow's complete line of lighting equipment . . . headlights, marker lights, directional signals, reflectors, mirrors and flares.

safety
after
dark



ARROW SAFETY DEVICE CO.
MOUNT HOLLY, NEW JERSEY

ARROW

Walter Snow Fighter Covers Beach Beat

THE WALTER Motor Truck Co. of Ridgewood, L. I., N. Y., has recently introduced a new special beach refuse collection body to be incorporated with its standard four-point positive drive chassis. All year utility is thus achieved since the unit is used to collect refuse from the beaches and parks in the summer, and in the winter it is used for normal refuse collection in the city or town. In addition, since it is provided with a one-way speed plow and center scraper (not shown in the illustration), power hydraulic controls, it can be used to plow snow and ice from parkways and other roads to fulfill its mission as a snowfighter.

The chassis shown in the illustration is equipped with a 150-hp engine. It has a gvw rating of 36,000 lb. Optional engines ranging from 125- to 300-hp are available.

The extra large, 16.00-24, low pressure single tires combined with the Walter four wheel drive system, is said by the manufacturer to provide ample traction on soft, sandy beaches, and on ice.

The power train includes the Walter tractor-type transmission which provides a single unit for the direct transfer of power from the engine through the transmission reduction gears, directly to the center differential and to the front differential drive. A cushion type, in line propeller shaft transmits the power to the rear bevel drive unit.

An automatic lock and torque proportioning differential permits the differentials to operate at proper speed and at relatively low torque.



The City of New York, Dept. of Parks recently received delivery on this Walter Snow Fighter, Refuse Collector

**THIS TOOL
IS WORTH**

\$12,500

ROTARY ELECTRIC IMPACTOOL

The shop that can do a 3-hour job in 1 hour and 5 minutes, is bound to make money, for that 64% saving in labor time is pure profit. This is the accomplishment of a well-known motor rebuilding company located in the Southwest, which uses four Ingersoll-Rand electric Impactools in tearing down and assembling automobile engines.

The switch to electric Impactools saved 115 minutes per engine, which enabled them to increase their production by 3 completed engines per day. This meant an additional clear net profit of \$231 per day, figured conservatively, or \$50,000 a year... \$12,500 for each Impactool. Needless to say, the cost of the tools was amortized in just a few days.

Send for your copy of Report 5082-6 which gives all the names, facts and figures on this outstanding extra-profit story.

Ask your Jobber for an Impactool demonstration

Ingersoll-Rand
11 Broadway, New York 4, N. Y.

Originator of Impactools—Air and Electric

560-18

**No Motor Burn-Outs,
can't stall motor**

**No-Kick, No-Twist
to operator**

Runs Nuts	Drills Masonry	Drives Studs	Bores Wood
Taps	Wire Brushes	Saws Holes	Extracts Broken
Reams	Drives Screws	Drills	Studs



"Who repaired the axle the last time?"

HORSEPOWER WORKS BETTER WHEN IT'S CLEAN!



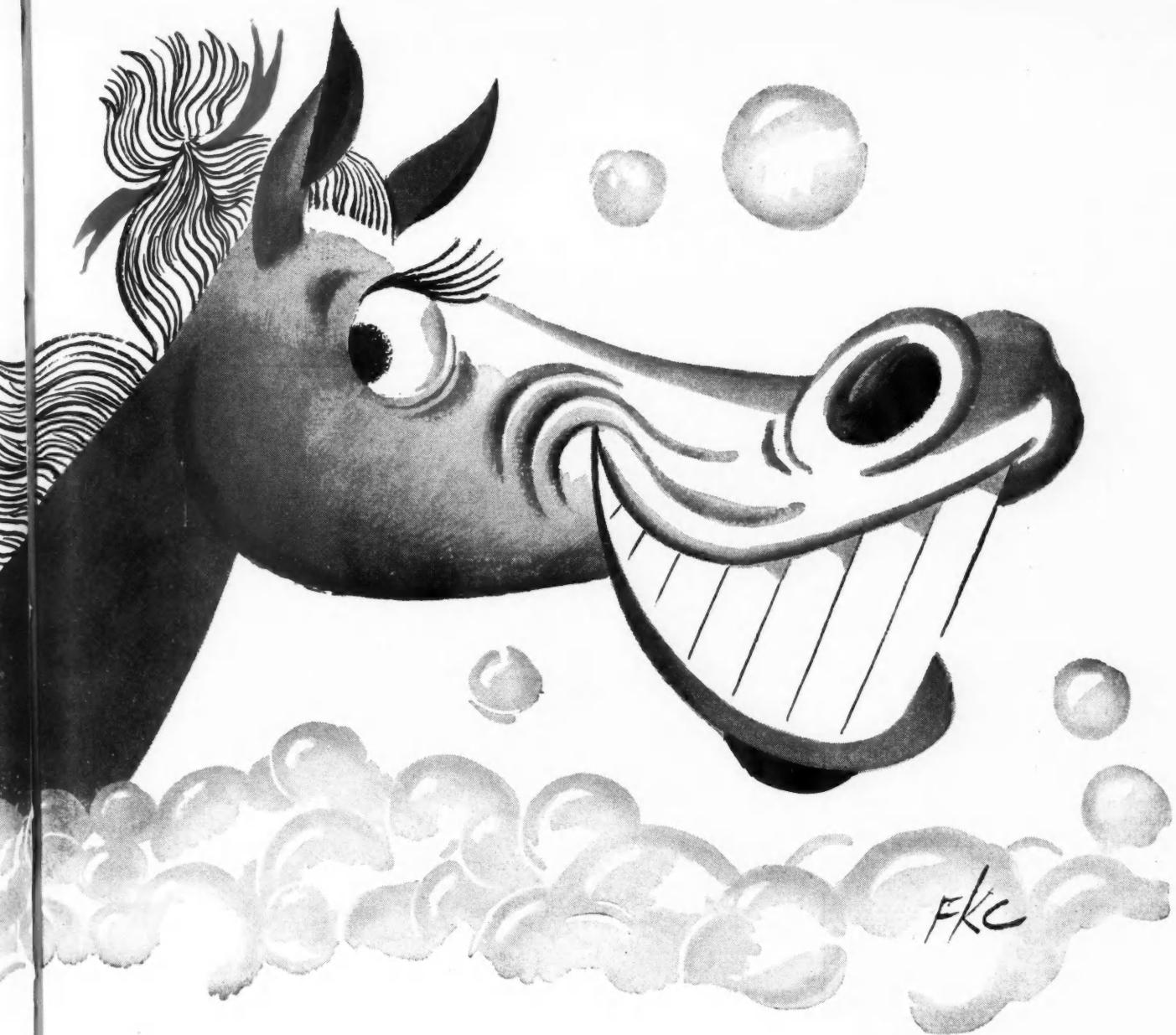
**That's why
Delvac Oils give
Top Performance
in Your Engines**

ENGINE EFFICIENCY calls for engine *cleanliness*... and Delvac Oils help keep heavy-duty gasoline and Diesel engines *clean*—promote full power—minimize wear—even under the toughest operating conditions!

Delvac Oils are heavy-duty oils with exceptional detergent-dispersive properties, and unusually high resistance to oxidation. They minimize formation of harmful deposits... effectively guard rings, pistons, cylinders and bearings against wear and corrosion... assure more available power.

This means fewer repairs and overhauls—*lower operating and maintenance costs all around!*

Get more revenue miles from *your* fleet with Delvac Oils—recommended or approved by 111 engine and equipment builders.



Here's Practical Help for Fleet Operators . . .

Socony-Vacuum gives you quality lubricants *plus* . . .

- Help on maintenance problems.
- Individual, tested lubrication schedules.
- Advice on correct application of lubricants, and on proper handling and storing.
- One source of supply, available everywhere.
- Simplified inventory—with . . .

1. **DELVAC OILS**—for all gasoline and automotive-Diesel engines.

2. **MOBILUBE GX**—multi-purpose gear lubricant for all manually operated transmissions, transfer cases and drive axles.

3. **MOBILGREASE**—in grades and types for lubrication of all chassis parts, engine accessories.



DELVAC OILS

Correct Lubrication for Fleet Operators

**THE FLYING RED HORSE COMPANIES: SOCONY-VACUUM OIL COMPANY, INC.
MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION**

! THERE are certain general rules relating to truck owners and their drivers which may lull the owners into a false sense of security with respect to their financial liability, or non-liability, in the operation of their trucks under special circumstances.

Recent modifications of automotive law, have in cases placed liability responsibility on the owner of a vehicle which was loaned to a known incompetent driver for non-business use. Prior interpretations of the law freed the owner of any such liability.

For example, it is usually conceded by the law, that if a truck owner loans his vehicle to another, he will not be responsible for accidents resulting in property damage, destruction, personal injuries or deaths of third persons, by reason of any negligent operation of the truck by the borrower.

The edict is based upon the judicial concept that when one lends and another borrows a truck for use in his own affairs, the relation of the parties is neither that of master and servant nor of principal and agent, but each is independent of the other, and the borrower is alone responsible to third persons for any negligent or reckless conduct of his while driving. Merely because an owner turns over his truck to another, to use for his own pleasure or business, does the owner incur liability to third persons for damaging accidents resulting from the borrower's negligence, incompetency, or incapacity while operating the borrowed truck.

This generosity of the law to truck owners is vouchsafed without regard to the relation that may exist between owners and borrowers, and irrespective of whether a fleet or a single truck is owned. The borrower may be an employee, a member of the owner's family, or a stranger, and in either situation the general rule of the courts makes the borrower alone liable to third persons for any ill results caused by negligent or incompetent driving.

In Maryland, an owner loaned his truck to an employee to attend a funeral, with the understanding that the employee would be relieved of further duties for the day after delivering a load of goods for the employer en route. While returning from the funeral, the driver negligently collided with a person and injured him. The victim sued the truck owner for damages. The state court exonerated the owner. It ruled that since the employee was not working at his job at the time of the accident, but was engaged in his own affairs, he was not the employer's agent. He was, therefore, solely responsible financially, for reckless driving.

The tenant of a North Carolina truck

Loaning Trucks

Owners lending vehicles for non-business use

owner desired the use of the vehicle to take a group, including members of his family, to church. The owner agreed, on condition that a competent

driver would be obtained. There was an accident on the way, chargeable to the driver's fault. Persons injured in the crash sought to compel the truck

An advertisement for AP (Associated Press) featuring a large, multi-story brick building with several windows and a central entrance. Above the building, the text "AP announces" is written in a bold, sans-serif font, with "announces" in a cursive script. Below the building, the word "a new" is written in a large, stylized, italicized font. The background is dark, and the overall design is professional and newsworthy.

Borrows Troubles

By Renso Dee Bowers

to known incompetent drivers, are liable

owner to compensate them. Their suit was denied, on the ground that the owner was neither the employer nor the principal of the driver, and was

therefore not responsible for his negligence.

Further illustrating the general rule exempting truck owners from liability

for damaging accidents caused by borrowers, an Ohio owner loaned his truck to a charitable organization, and permitted the driver whom he regularly employed to go along and drive it, strictly under the direction and control of the organization. The operator became careless on the occasion, and injured a person. In a court action over the occurrence, the owner was absolved from liability, since the driver had not been working for him at the time, but was the servant or agent of the organization.

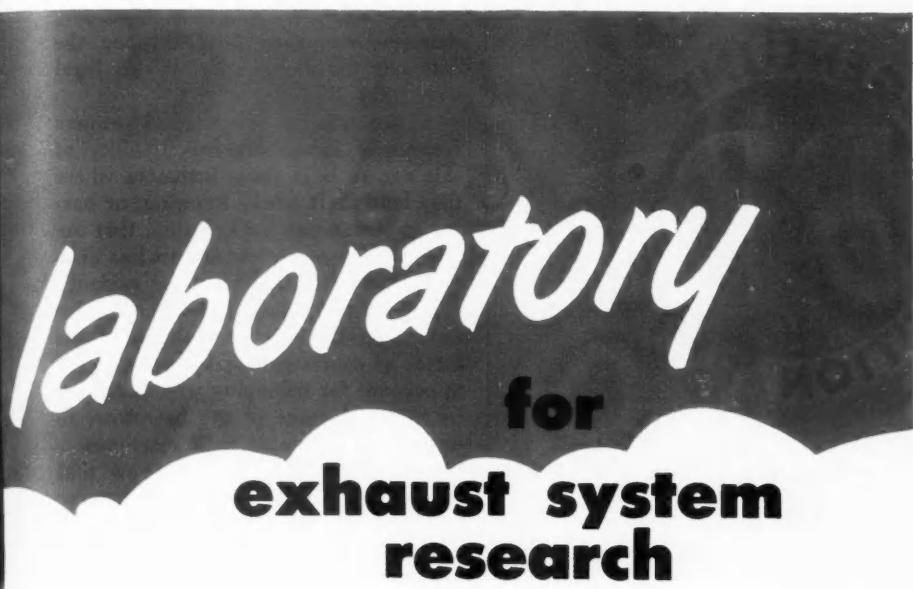
Liability Exemption Changes

THIS favorable exemption from liability under primary legal principles, however, has received modifications in recent automobile law. There are now grave dangers which may confront an owner, whether a corporation or an individual, in allowing another to take and operate a motor vehicle "for free." Owners should be wary and cautious, if they would escape the legal pitfalls and quagmires lying in wait for them, when other persons seek to borrow their machines for individual purposes.

These modern modifications of the former governing law amount to this: If the owner of a truck lends the vehicle to another, knowing, or charged by the situation and circumstances with knowing, that the borrower is an incompetent, reckless, or careless driver, such owner will be held financially liable for injuries to third persons caused by the borrower's unfitness as a driver. This is upon the ground that the owner is considered by the courts to be personally negligent in entrusting the vehicle to one whom he does not know, or reasonably believe, to be an experienced and competent driver.

It may be explained by saying that if an owner knows, or could by reasonable diligence ascertain, that the borrower is either too young or too old to drive safely, is physically incapacitated, is intoxicated or addicted to the use of liquor, is unlicensed or has had his license revoked, or is characteristically a careless or reckless driver; that owner will be chargeable with legal negligence in entrusting his vehicle to the borrower. Therefore, liability against the owner will be imposed in favor of any third person who suffers injury or damage in the event of an accident.

(TURN TO PAGE 108, PLEASE)



This specialized laboratory has just been completed by our subsidiary — Oldberg Manufacturing Company — suppliers of original equipment mufflers to the automotive industry for over forty years. The new facilities, devoted exclusively to solving exhaust system problems, assure the continuance of AP's leadership in improving muffler design and delivering the finest of mufflers and pipes to you.



AP
THE AP PARTS CORPORATION • TOLEDO 1, OHIO
Manufacturers of MUFFLERS • PIPES • MIRACLE POWER • dgt-123



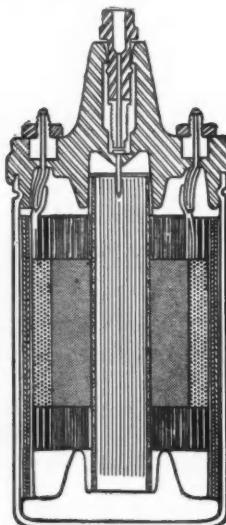
When you use P&D products you can be sure you're giving your customers top performance. Genuine P&D parts are manufactured completely in the modern P&D plant — from raw materials to finished products. Long experience in automotive engineering combined with skilled workmanship assures you of the best products you can get.

Take the P&D coil, for example. Notice how the combination high tension terminal for both screw and plug type connections (a solid brass insert) is molded into the cap to assure a moisture-proof connection. Then notice the patented one-piece (seamless) air cooled container — ribbed to give ample surface to dissipate heat. Our exclusive Perma-Sealing method of locking the plastic top to the container makes for an absolutely moisture-proof seal.

Write today for your free copy of Catalog No. 49 giving full information about P&D condensers, contacts, switches, relays, etc. — the one complete line of quality starting, lighting and ignition products for all automobiles, trucks and buses.



MANUFACTURING COMPANY, INC.
LONG ISLAND CITY 5, N. Y.



Turn Out Better
Tune-up Jobs
With PeeDee

Loaning Trucks

Continued from Page 107

A California drayage and storage company, operating a fleet of trucks, assigned one to be used by a man whom it knew to have defective eyesight, and to be without a driver's license. While driving for his own purposes, this man recklessly ran into another car, causing heavy damage. In litigation against the company that followed, the state court ruled that since its officers were forewarned that the one to whom it entrusted its truck had no operator's license, it was put on inquiry as to his competency. A judgment awarding damages was then saddled upon the company for its violation of this legal duty.

A situation in which truck owners frequently incur vicarious liability of this nature is in those instances where they lend their trucks knowing, or having opportunities for knowing, that the borrowers are careless or reckless drivers. When this happens, and evidence of their laxity is clear, owners receive slight consideration of leniency at the hands of courts and juries when called to account for damaging wrecks caused by the negligence of the borrowers to whom they entrusted their machines.

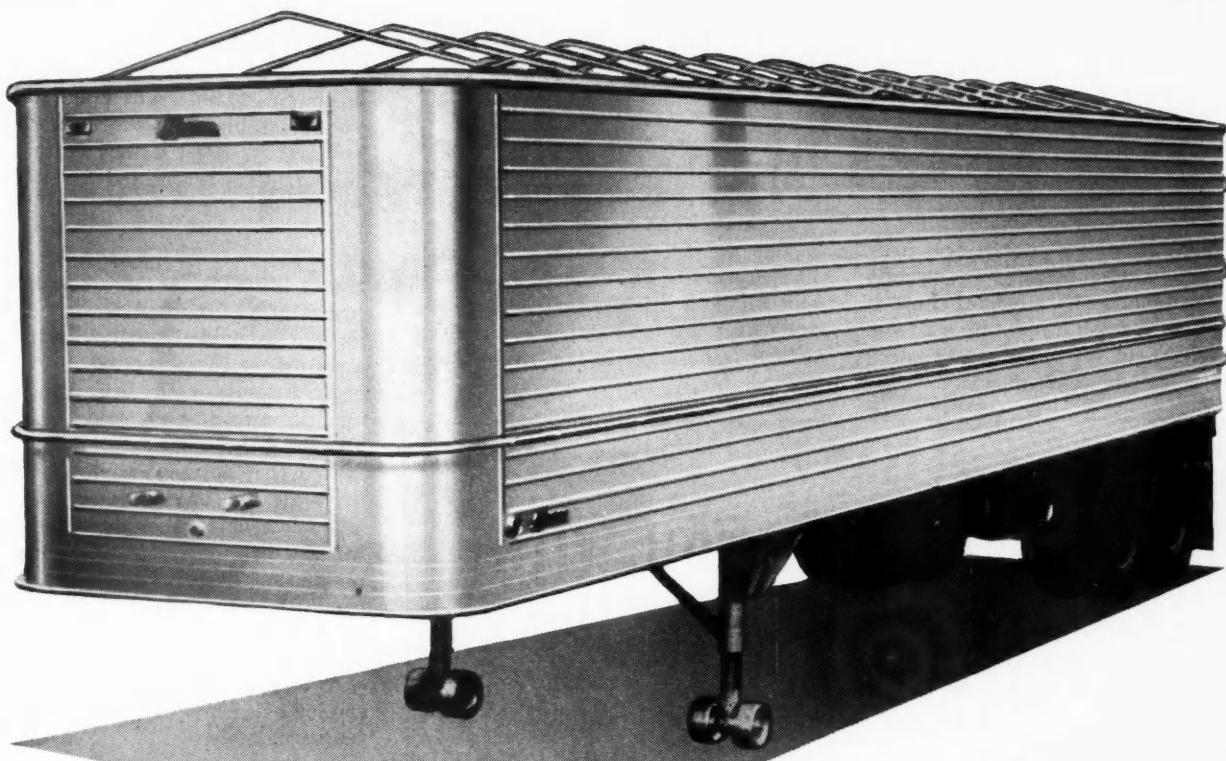
What circumstances will show that the owners had prior knowledge, or opportunities for obtaining information, as to the incompetency of the borrowing operators, will be judged by the standards of reason and experience, as these qualities are possessed and made use of by ordinary human beings in everyday life.

Down-to-earth knowledge of an owner that one applying for the loan of a truck is a careless and reckless driver would, of course, be established by evidence that he had personally observed the driver engaged in that kind of driving, or that he had witnessed wrecks, or the results of wrecks, caused by it.

Proof almost as conclusive would be accepted in court against the owner if it were shown that he had been informed on reliable authority that the borrower's driving license had been revoked because of his negligence in operating a motor vehicle.

And even where the owner of the truck sought to be borrowed had known or heard that the borrower's reputation was that of an inefficient operator, the circumstances would at least require him to be as diligent as an ordinarily prudent person would be in seeking to learn the facts as to the status of the man as a safe driver, or otherwise. If he failed to exercise dili-

(TURN TO PAGE 110, PLEASE)



In Answer to Your Needs

The new **BROWN MSTO** . . . open top semi-trailer

The Brown open top trailer has been made on special order for several years. Now through widespread demand it has been added to our regular production line.

This gleaming new Brown model is the latest word in open tops for either single or tandem axle operation. It has all the proven Brown structural features that give the utmost in strength with minimum weight.

Roof bows of lightweight tubing are firmly anchored to the sidewalls, yet are easy to remove. Hinged rear header swings in either direction or can be removed completely. Continuous rope tie rail securely bolted through siding to side panel stiffeners.

This model is also available with removable weathertight all aluminum roof sections. Gives you more flexibility. Can be used as a partial van and partial open top — a full open top or a fully closed van.

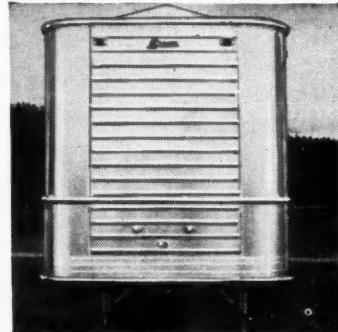
Your local Brown Trailer distributor will supply you with more complete information on this versatile trailer.



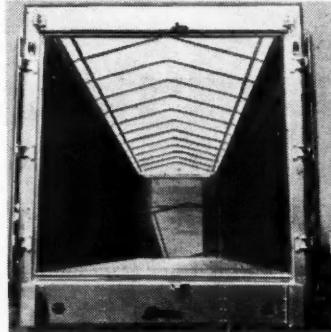
"The Scale Tells the Tale"



BROWN TRAILERS, INC.
Toledo, Ohio Spokane, Wash.



Head on view showing up-turned wing plate on king pin structure and continuous top and bottom longerons.



Rear view showing rigid rear frame construction and removable header — hinged both ends.

Loaning Trucks Borrows Troubles

Continued from Page 108

gence, and so was not informed, that the borrower was a careless or reckless operator at the wheel, he would be responsible for resulting accidents.

As an example, a tobacco company of national prominence was recently fined for damages by a federal court at the suit of a person injured by the reckless driving of one of the company's employees. It had loaned a truck from

its fleet to the driver for his own purposes. The company pleaded ignorance of the fact that the employee was a reckless driver. But the verdict went against it on evidence that its officials had previously known acts of reckless and drunken driving by the borrower, and disinterested witnesses testified that his reputation, in that respect, was unfavorable.

Currently, the greatest volume of litigation involving truckers who loan their vehicles arises because of accidents growing out of drunken driving by the borrowers. Owners of either fleets or single machines have grounds for expecting the worst if they entrust them to borrowers whom they know to be intoxicated or to be addicted to drinking. Here, too, they can be found guilty of negligence whether they have positive knowledge of the condition or habits of a particular driver, or fail to make reasonable investigation into the situation.

An Arkansas court said a short time ago, in awarding damages against a lender: "There is no dispute about the law, that if anyone permits another to drive his car, knowing such one to be a reckless or careless driver, or knowing that he is in the habit of becoming intoxicated and driving a car in that condition, he will be liable for any injury caused by the negligence of such driver."

A certain driver had been in the employ of an Iowa company for several years, and it was aware that he often became intoxicated. It also knew that he sometimes drove the truck for his personal use. The manager allowed him to take out the truck one day, knowing that he had been drinking during the morning and that he was under the influence when he left with the machine. After performing his allotted task for the company, the driver went out on his own. He had a collision that evening, due to his reckless driving, and injured other persons. A state court adjudged the company guilty of legal negligence, authorizing the assessment of damages against it for entrusting the truck to the incompetent driver, and thus making the happening of injurious or fatal accidents likely.

To illustrate circumstances under which liability is not imposed under somewhat analogous conditions, reference is made to a recent case in Ohio in which an interstate carrier by truck, operating in West Virginia, Pennsylvania, Ohio, and Indiana, had a close call in escaping a damage judgment at the suit of a person injured by one of its drivers to whom it had entrusted a truck to use "on his own."

The company, with headquarters in West Virginia, employed one, A., as a driver, placing in his custody a tractor-trailer, which was to be kept by him at his home in that state, and to be used by him in the company's transportation business at such times only and to such places as it would direct. His compensation was to be 20 per cent of the gross pay load.

A. was, in fact, a negligent driver, addicted to the use of intoxicants. He

(TURN TO PAGE 114, PLEASE)

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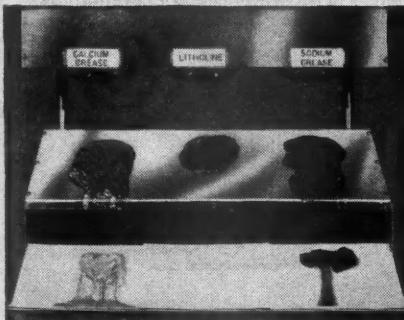
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LUBRICATION MEANS TO YOU...



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- 4 Reduced time-out for lubrication and maintenance
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- 10 A finer grease at every lubrication point



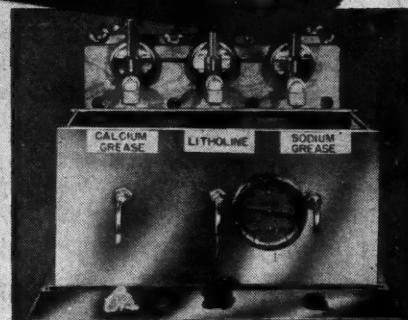
HEAT-RESISTANCE TEST!

The samples are heated on a plate. At 190°F., the calcium grease disintegrates. At 340-350°F., the sodium soap structure collapses and releases the oil. Bearing failures would follow. At 380°F., Litholine shows no effects, proves superior for high temperature lubrication jobs.



MECHANICAL STABILITY TEST!

Worked (kneaded) samples are placed beside samples of unworked grease. Steel balls are dropped. Distance ball sinks in worked samples shows increase in softness—loss of stability. The calcium grease showed greatest increase in penetration, the sodium grease next. Litholine showed no difference whatever . . . proving its superior mechanical stability in service.



LOW TEMPERATURE PUMPABILITY TEST!

Lever-type grease guns are filled with chassis greases and cooled. At 20°F., it is impossible to pump the sodium grease. At 0°F., it is impossible to pump the calcium grease. But Litholine still pumps in good volume! Yet Litholine is a heavier (harder) grease. Thus, Litholine has the body for summer service yet is pumpable in severely low temperatures.

COMPANY

For lubrication counsel, or more information on Litholine, see your nearest Supplier of Sinclair Products, or write to Sinclair Refining Company, 630 Fifth Avenue, New York 20, New York.



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Underwriters' Laboratories, Inc. Listed

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Loaning Trucks

Continued from Page 110

had previously pleaded guilty to a charge of drunken driving in Ohio, for which his license to drive in that state had been revoked, and he had been fined and sent to jail.

These facts about him were unknown to the trucking company; and its manager, before employing him, inquired of two former employees about him, who reported him as either very good or as average.

One day this driver, in violation of instructions, disengaged the tractor from the trailer to take his father, who had been visiting him, to the latter's home in Ohio. Both driver and passenger were intoxicated on the trip, and after entering Ohio, the driver negligently collided with an approaching car, causing a wreck and heavy damage.

In a suit by the victim against the trucking company, the Ohio court absolved it from liability, ruling that the proof failed to show that the company had been negligent in entrusting the truck to the driver. "In order to charge the owner of a motor vehicle (the trucking company) with liability for negligence in entrusting the vehicle to an incompetent, inexperienced, or reckless driver," the court declared, "it must be shown that the owner had knowledge of the driver's inexperience, incompetency, or recklessness as an operator of a motor vehicle, or that in the exercise of ordinary care he should have known thereof from facts and circumstances with which he was acquainted."

END

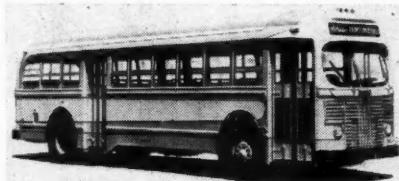
Fuel Trails Bus



Separate propane fuel trailer unit permits operation of Twin Coach demonstrator bus in any location. Trailer was designed and built by Parkhill-Wade, Los Angeles. Unit consists of individual 590-gal. tank designed under ASME code for 250 psi. working pressure. Tank is mounted on heavy-duty dual tired trailer. Filling equipment is operated by electric motor drive, direct-connected to Smith MC-1014 pump. Pump is piped to Neptune direct-reading meter operating in conjunction with a differential back pressure regulator for control of the meter.

White Powers Bus With Diesel

Four-cycle, six-cyl, 200-hp, Cummins NHHBI-600 engine is mounted underfloor, amidship, with direct drive



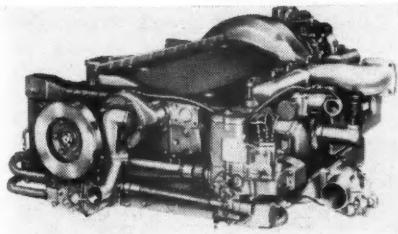
Integrated body construction stylized front, are features of new diesel bus

A NEW LINE of large-capacity buses powered by a 200-hp, 4-cycle diesel engine has been introduced by The White Motor Co. of Cleveland, Ohio. Known as the White 1100 Diesel, the buses incorporate all other design advantages of the current line including an integral body construction, stylized front, large destination signs and positive ventilation.

Diesel Engine Details

THE CUMMINS Model NHHBI-600 engines power the new line of buses. This 6-cyl, 4-cycle diesel engine has a piston displacement of 743 cu in. and develops a maximum torque of 530 ft-lb at 1200 rpm and 200 hp at 2100 rpm. The engine is mounted in the center of the bus under the floor. Feature of the power train is the direct in-line drive with an efficient automatic torque converter. Maximum accessibility is claimed by the manufacturer with a resulting low maintenance cost.

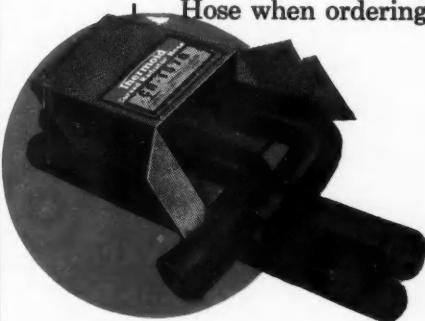
Low fuel economy is attributed to the exclusive Cummins fuel distributing system. The use of one single-plunger pump to measure the fuel charge for all cylinders assures that each injector receives the proper, predetermined amount of fuel at any required engine speed and load.



The new diesel-powered White 1100 employs the Cummins Model NHHBI-600 four-cycle, six-cyl engine. Mounted underfloor, amidships, for direct-line drive, it has a piston displacement of 743 cu-in., maximum torque of 530 ft-lb at 1200 rpm and develops 200 hp

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Automotive Transportation in Industry—by S. J. Lee

Automotive Transportation in Industry is the title of a new 178-page book published by Fleet Management Corp., Chicago. Author S. J. Lee presents to the industry an analysis of three systems for procuring vehicles for business use, and a detailed explanation of each. He describes the services available through automotive dealers and leasing or rental companies, showing how to get the most out of these services.

With down-to-earth, practical facts the author shows fleetmen how many operations can reduce expenses for automotive equipment and maintenance through the employment of specialists to take over the responsibility of purchasing, retirement, service and periodic maintenance.

The second part of the book is virtually a manual of instruction for establishing a well-managed fleet program in those companies operating company-owned equipment. It presents tried and proven procedures for purchasing equipment, installing preventive maintenance schedules, organizing safety programs, etc.

This publication represents a sincere effort to create an awareness on the part of fleetmen of the importance of good fleet management practices from the standpoints of economy, efficiency, safety. Many fleets looking for improvements along these lines can indeed profit from a study of this text. Price of the book is \$5.

SOUND EQUIPMENT, a catalog, No. E-351, by Mark Simpson Mfg. Co., Inc., includes descriptions and specifications of individual amplifiers and complete sound systems from 8 watts to 52 watts for fixed, portable and mobile installations. Write to Mark Simpson Mfg. Co., Inc., Long Island City, N. Y.

CUTTING AND WELDING APPARATUS, a catalog illustrates and describes the entire line of Milburn equipment which includes oxy-acetylene cutting and welding apparatus, regulators for oxygen, acetylene and other gases, accessories and other supplies, portable carbide lights. Copies may be obtained by writing to Alexander Milburn, Inc., Baltimore, Maryland.

WEATHERHEAD CATALOG, No. J-103-L, contains technical information and car manufacturers' listings of all the original equipment parts manufactured by The Weatherhead Company. Specialized parts number interchange information is found in the new technical data section. Write to The Weatherhead Co., Cleveland, Ohio.

(TURN TO PAGE 118, PLEASE.)



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You've never before had a piston ring to compare with Hastings Chrome-Faced Steel-Vent.

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Fleetman's Library

Continued from Page 116

WAYS TO EXTRA PROFITS, a 20-page booklet, explains with numerous photographs and charts ways to profit by the use of high pressure steam cleaning equipment. Sections are devoted to specific industries including the truck, bus and taxi fleet operator, construction, mining and highway departments. Included are descriptions and specifications of the units and accessories which comprise the steam cleaning line of the Hypersure Jenny Div. Send for your copy to Homestead Valve Mfg. Co., Coraopolis, Pa.

"MR. MURPHY HAS A VAULT," a new booklet on insulated products tells the story of a businessman proud of the new vault constructed in his office. Floor plans of Mr. Murphy's office reveal the shortcomings of his arrangement in case of fire, demonstrate the many advantages of point-of-use safe equipment.

Illustrations include construction features of insulated equipment, the company's furnace where equipment is subjected to UL and Safe Mfrs. Natl. Assn. tests.

Write for booklet SC-679 to Remington Rand branch office or from Remington Rand, Inc., New York, N. Y.

INDIUM, compiled by Maria Thompson Ludwick, covers briefly the history of the Indium Corp. and contains material on the subjects of discovery, occurrence, extraction, general physical and chemical properties, electrochemistry, analysis, alloys of indium with other metals, as well as phase diagrams, photomicrographs and various charts. A feature is the annotated bibliography which presents a great deal of material on indium from widely scattered sources. Copy may be obtained for \$7.50 from The Indium Corp. of America, New York, N. Y.

ROLLER CHAINS AND PARTS, folder F57-50 gives a complete description of all Morse factory-packaged chains and parts together with list prices. Send request to Morse Chain Co., Detroit, Mich.

KARDEX VISIBLE RECORD CONTROL, an 80-page catalog, is a comprehensive presentation on all phases of the Kardex principle.

It describes the various combinations of record forms which may be incorporated in Kardex "pockets" and the variety of colored signal control methods.

Five types of visible cabinets are illustrated, including a new mechanized unit, with complete specifications. Copy may be obtained by writing to the Management Controls Div., Remington Rand, Inc., New York, N. Y.

ALUMINUM EXTRUSION PLANT, a booklet describes and pictures operations at Phoenix, Ariz., aluminum extrusion plant. This 12-page, 6 x 9 in., 3-color booklet divides plant operations at Phoenix into three sections . . . the cast house, handling aluminum from pig to billet; the extrusion department, taking the aluminum from the billet to the extruded section; and the tube mill, taking the aluminum from tube bloom to tubing.

Copies are available upon request to Reynolds Metals Co., Louisville, Ky.

SERVICE TOOL GUIDE, a 68-page booklet, contains an extensive and complete listing of special tools required in the proper servicing of automotive vehicles and standard and automatic transmissions. Included are sections devoted to general shop equipment, tools for body, brakes, springs, front suspension, etc. Description of each tool or piece of equipment is accompanied by an illustration. Write to Kent-Moore Organization, Inc., Detroit, Mich.

AUTOMOTIVE ADHESIVES AND SEALERS, a 16-page brochure, lists uses and application procedures for adhesives and sealers used in weatherstripping, body caulking, sound deadening, top sealing, etc. Write to Minnesota Mining & Mfg. Co., St. Paul, Minn.

RUBBER PUTTY, a new catalog section cites advantages, gives directions for use and lists stock colors and grades of Plastikon.

Product is recommended for many types of glazing and sealing particularly where vibration, corrosion or moisture exists. Copies are available upon request to The B. F. Goodrich Co., Akron, Ohio.

WHAT COUNTS MOST IS THE "MILEAGE"
YOU GET FROM YOUR REPLACEMENT BEARING DOLLARS



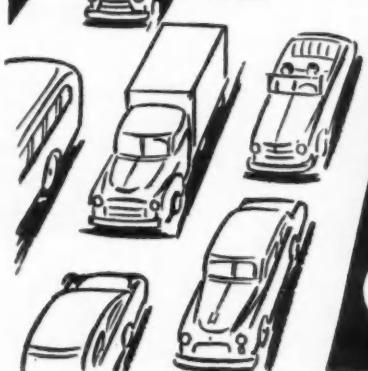
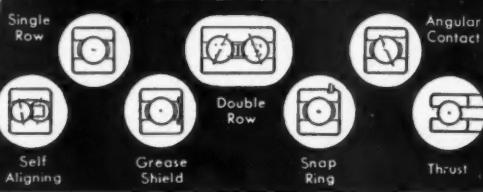
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Truck-Rail Controversy Highlights Transport Hearings

Freight rates, government aid, regulation of operation are discussed at Senate investigation of national transportation policy. A complete story on the hearings appeared in January CCJ, and progress reports have been made from time to time. The sub-committee's findings will be published when they become available.

Lackawanna and Western Railroad Company, was devoted in its entirety to the alleged unfair advantages provided by government to the trucking industry. He asserted that, while the railroads build and maintain their own rights of way, public money amounting to \$59 billion has been expended since 1921 on the highways and streets of the nation which are used by the trucks for profit. He charged that trucks are destroying

(TURN TO PAGE 124, PLEASE)

THE SUBCOMMITTEE on Domestic Land and Water Transportation of the Senate Interstate and Foreign Commerce Committee has finally concluded hearings, subject to the call of the chair, in connection with its investigation of the national transportation policy. The hearings got under way early in April and the subcommittee has been meeting each Tuesday and Thursday to hear the testimony of witnesses representing the interests of every form of transportation. The subcommittee is charged, under Senate Resolution 50, with making a full and complete study and investigation of transportation problems and to determine whether existing conditions conform to the national transportation policy as set forth in the Interstate Commerce Act, the effect of large expenditures of public money and private capital upon transportation charges, and to what extent such expenditures are reflected in costs of production and prices to consumers. The subcommittee's findings are not expected to be available for several months.

The Rail-Truck Controversy

RAILROAD witnesses opened the hearings with a presentation of the history and present condition of their industry. Each witness confined his testimony to some particular phase of railroad operation and management with which he was most familiar but, no matter what his subject, almost every representative of the rail lines managed to indicate that "unfair" competition from other forms of transportation is the cause of the rail difficulties.

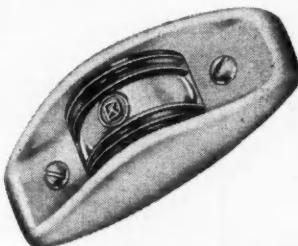
The testimony of David I. Mackie, General Counsel of the Delaware,

Excerpted from a news summary prepared by National Highway Users Conference, Inc.

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KD A541 is recognized as the best armored marker lite by mechanics and fleet owners. Tough cast housing protects bulb and Fresnel lens from glancing blows. Greater visibility. Mounting pad between lite and body absorbs vibration. • Single unit assembly popular with mechanics. Steel clips hold lens in housing when making bulb replacements . . . lens cannot fall or break. Easily turning screws held in place by clips . . . no more lost screws. • Brass socket. Brass or steel base held by four mounting screws assures positive ground. 2 or 3 c.p. bulb. Aluminum finish. Corrosion proof.



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KD 600-3 Three flares in box . . . rugged . . . dependable . . . leakproof . . . hold 42 oz. kerosene. Complies ICC and all state specifications.

K-D LAMP COMPANY
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Truck-Rail Controversy

Continued from Page 123

our roads, causing higher maintenance costs, and requiring the construction of better roadbeds and heavier pavements. Trucks receive subsidy at the state level, he said, because the gasoline tax revenues and other charges do not, in his opinion, distribute the highway costs equitably among the users. Furthermore,

he charged that Federal subsidy to trucks is provided by increased Federal aid through the years for highway construction. One recommendation, of several that he made to the subcommittee, was that Congress should impose a graduated highway user excise tax upon all heavy vehicles, such tax to be related to the

gross weight of the vehicle and its annual mileage.

The railroad testimony was followed by that of representatives of industries dependent upon the rail lines for existence which, wholly or in part, agreed with the rail presentation.

The first representative of highway transportation to appear before the subcommittee was Jack Garrett Scott, General Counsel of the National Association of Motor Bus Operators. He showed that highways of the nation are just as indispensable to the railroads as they are to motor transport since most of the freight hauled by the rail lines has one or more motor hauls in some stage of its movement. He said that nothing has occurred since the appearance of the Eastman report to change the findings of that study which indicated that buses and trucks were more than paying a fair share of highway user taxes.

John V. Lawrence, Managing Director of the American Trucking Associations, Inc., presented a thorough review of the benefits accruing to the country by the intelligent development of the trucking industry. He pointed out, with specific examples, how the railroads were forced to give the public better service in order to compete with that rendered by motor transport. He urged that this competitive situation be allowed to continue by rejection of the rail request for permission to increase their ownership of trucking companies. Such permission would eventually lead to a railroad monopoly of both the motor and rail industries, Mr. Lawrence said.

William A. Bresnahan, ATA's research director, analyzed and refuted the anti-truck testimony of previous railroad witnesses, and he accused the rail lines of promoting their campaign against the trucking industry as a mask to hide the real difficulties within the rail industry itself. He branded as wholly unfounded the accusation that motor trucks are not paying a fair share of highway costs and charged the railroads with using questionable source material to support this charge of "subsidization." Mr. Bresnahan presented two picture booklets to the subcommittee—one showing highway damage caused by weather conditions alone on roads not used by heavy trucks, and the

(TURN TO PAGE 126, PLEASE)

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So Simple to Use Your Men Will Choose

IMPERIAL
SINGLE SOLUTION
FREEZETESTERS

For Faster, More Dependable Radiator Testing

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The extra length, easy-to-read scale on the float and the big 10-degree graduations on the thermometer make it easy for even your newest men to make accurate tests. All readings are made with tester in its natural, vertical position.

Thermometer scale and correction chart are sealed in the jar—no dirt or radiator solution can reach them.

Net price to

No. 548-T For "Prestone" Fleet Owner brand Ethylene Glycol.....	\$1.90
No. 549-T For "Zerex".....	1.90
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No. 600-T Imperial High Speed Universal Freezetesters tests all basic solutions of alcohol, methanol, ethylene glycol. Simplest, most practical, and easiest-read universal tester on the market.

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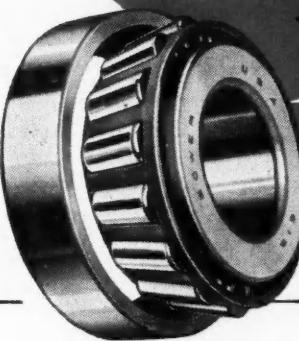
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Truck-Rail Controversy

Continued from Page 124

other containing photographs of several of the largest types of "highway freighters" owned and used by railroads themselves.

In joint testimony, Chester G. Moore, secretary of the ATA, and John R. Turney, transportation specialist, presented an exhaustive analysis of the economic difficulties of American railroads. They declared

that the present railroad condition is not the result of competition from other forms of transportation but rather of adherence to outmoded and obsolete operating practices.

They presented statistics showing railroad freight traffic to be highly profitable but largely offset by the excessive losses incurred by the rail lines in the movement of passengers, express, parcel post and baggage. The subcommittee was told that substantial reduction in railroad losses

could be effected by diverting to other forms of transportation all mail which cannot be hauled on regularly scheduled passenger trains and by consolidation of all other movements into freight carload lots. The witnesses concluded their statement by saying that "provident management" is the only solution for the present financial difficulties of the rail lines.

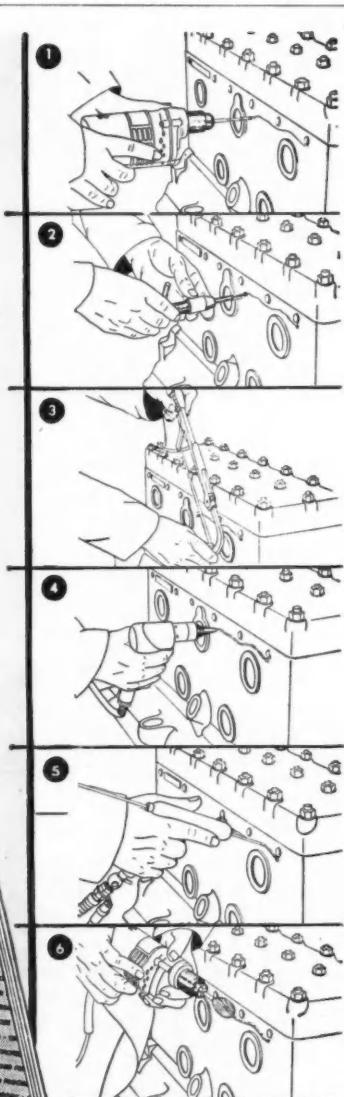
The Moore-Turney testimony was delivered at a time when, presumably, the railroads had fully stated their case. However, on the day before the hearings ended three rail witnesses appeared before the subcommittee to offer rebuttal testimony. They attacked the validity of the statistics presented by Messrs. Moore and Turney and said that the costs of rail passenger and freight operations could not be separated to effect the savings estimated by the highway transportation witnesses. They asserted that, even if the rail lines desired to discontinue the haulage of unprofitable mail, the Postmaster General alone and not railroad management could make that decision. All three witnesses unanimously agreed, as before, that "unfair" competition and regulation of rail competitors is the cause of most railroad ills.

What's the best way to repair a cracked water jacket?*

You will find complete, step-by-step instructions on new ways to make this and other crack repairs in the new Tincher CRACK REPAIR Manual. Fully illustrated by drawings like the ones shown here in reduced size, this big manual covers such subjects as "Types of Cracks and Their Causes" . . . "Why Repair Cracks?" . . . and "How to Analyze The Problem." It tells, too, how the Tincher Electro-Mechanical Process can save you time and bring you unusually attractive profits.

Free!

Send coupon
for this valuable
book now!



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Alloy-Seal

Wholly owned subsidiary of
IDEAL INDUSTRIES, INC.

90% of all common cracks in engine
blocks and heads can be repaired
simply by circulating Tincher Alloy
Seal as instructed on the can.

TINCHER PRODUCTS COMPANY
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Please send me the Tincher CRACK REPAIR
Manual, FREE!

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COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
JOBBER'S NAME _____

The Question of Regulation

ANOTHER important consideration which received lengthy discussion in the course of the hearings was the adequacy of present regulatory laws as applied to the various forms of transportation under the Interstate Commerce Act. Some witnesses urged a sweeping revision of governmental transportation machinery while others expressed confidence in the present structure. However, all witnesses who testified on the matter of regulation seemed to be convinced that there was some room for improvement of the present system although many suggested only minor changes.

Albert S. Goss, Master of the National Grange, urged the creation of a research organization which will make a thorough study of our whole transportation problem in the hope that we might develop policies and legislation designed to provide the users with a comprehensive system best calculated to meet their needs at

(TURN TO PAGE 128, PLEASE)

**NOW ROAD EXPERIENCE
CONFIRMS WHAT
TESTS HAVE SHOWN**



NYLON CORD TIRES COST LESS PER TON MILE

**NYLON CORDS PROTECT AGAINST ALL THESE
CAUSES OF TIRE FAILURE**



Heat—Nylon cords can withstand hotter temperatures than a tire will ever encounter on the highway.

Moisture—Nylon's resistance to deterioration by water will save a tire where other tires would fail.

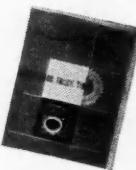
Flex Fatigue—Nylon's resilient strength makes tire cord stand up under the complex compression-tension flexing that takes place every time a tire turns—reduces flex-fatigue failures.

Bruise Damage—Nylon's toughness virtually ends cord ruptures caused by tires hitting curbs and holes at high speeds.

Experience is teaching more and more fleet operators how nylon cord tires cut costs. The reason is that nylon's unusual properties give tires superior resistance to heat, moisture, flex fatigue and bruise damage. With no blowouts, more recaps and less road delay, average tire mileage goes up—costs per ton mile go down. Try a set of nylon tires on your toughest haul, for your heaviest loads—compare their performance with other tires—and see for yourself.

FREE BOOKLET on nylon tires—mail coupon for your copy.

NOTE: Du Pont makes nylon fibers, does not produce tires. Major rubber companies have nylon cord tires available. See your dealer.



**DU PONT
NYLON FIBERS**



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Nylon Division
E. I. du Pont de Nemours & Co. (Inc.)
Wilmington 98, Delaware.

Please send me your booklet "Now You Can Cut Your Tire Costs."

Name _____ Title _____

Firm _____

Street _____

City _____ State _____

For NYLON . . . for RAYON . . . for FIBERS to come . . . look to DU PONT

Truck-Rail Controversy

Continued from Page 126

the lowest possible cost. This research job would take at least two years, he said, and should not be done by a Congressional committee but by a competent staff with funds provided by Congress. Since our transportation policies are still, to a large extent, built around rail and water transportation, with little recognition of the newer forms devel-

oped in the last forty years such as trucks and airplanes, the Grange feels that we are headed for a crisis in transportation unless something rather drastic is done now.

Evans A. Nash, representing the U. S. Chamber of Commerce, told the subcommittee that there should be ultimately established a single regulatory body for all competing forms of transportation and that careful study should now be undertaken by the government to accomplish this objective at some future date.



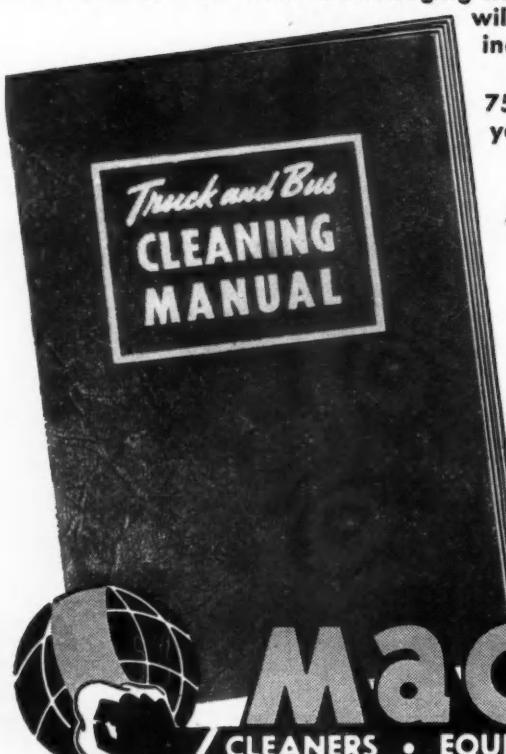
Are You SURE It Needs An Engine Job?

Before you tear down that engine because she's pumping oil and is sluggishly lazy... give it a Magnus 755 desludging. Then, take compression readings and you'll know whether she goes back into service immediately, cured of her stuck rings and clogged lubrication, or stays in the shop for an overhaul!

Desludging often eliminates the need for an overhaul by freeing rings and opening up lubrication lines. Periodic desludging will lengthen the time between tear-downs. Desludging before every engine overhaul will assure you of a clean engine including oil lines and screens.

Desludging with Magnus 755 costs little, yet can save you much!

Desludging is only one of the cleaning shortcuts described in the Magnus Truck and Bus Cleaning Handbook. Write for your copy today!



MAGNUS CHEMICAL CO.,
38 South Ave., Garwood,
N. J. In Canada — Magnus
Chemicals, Ltd., 4040 Rue
Masson, Montreal 36, Que.
Service representatives in
principal cities.

J. C. Gibson of the Association of American Railroads recommended that all governmental agencies exercising predominantly administrative or promotional transportation functions be consolidated. Furthermore, he urged that the three Federal tribunals now exercising regulatory jurisdiction in the transportation field (the Interstate Commerce Commission, the Maritime Commission—now the Maritime Administration of the Department of Commerce—and the Civil Aeronautics Board) be also consolidated into one agency. After consolidation, the transport regulatory agency should be maintained in independent status outside of any executive department, he said. His final recommendation was that all transportation agencies, both administrative and regulatory, should be consolidated into an independent transportation commission answerable only to Congress.

Edgar S. Idol, General Counsel of the American Trucking Associations, Inc., told the subcommittee that "the lack of a fully coordinated government policy with respect to transportation is due to the lack of participation by the Executive Branch in the transportation policy. The centering of both administrative and judicial authority in a body reporting to Congress (the I.C.C.) is, in fact, a departure from our constitutional principle of a separation of legislative, judicial and executive powers."

He said that almost all complaints against the present national transportation policy can be traced to either (a) imposing both administrative and judicial duties on an eleven-headed commission, (b) the centralization of all authority, over both judicial and administrative work in Washington, or (c) the handling of staff work through functional bureaus.

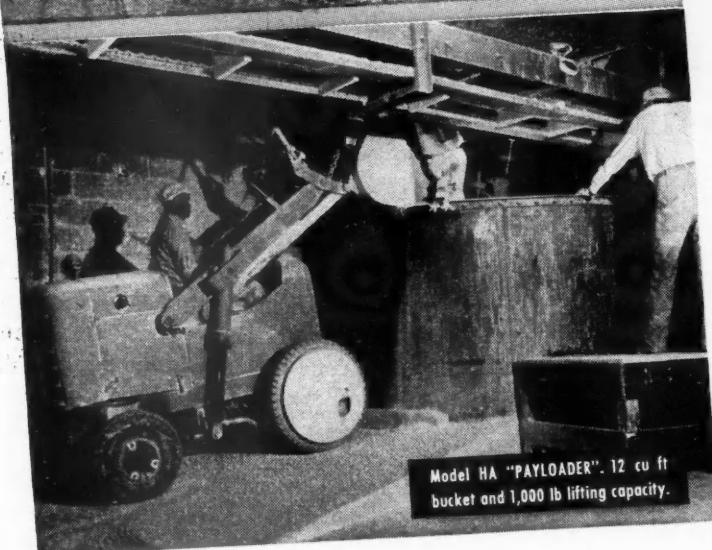
"Gypsy" Truck Operations

SEVERAL witnesses came before the subcommittee to complain of the operations of truckers who usually own only one piece of equipment and, it was charged, will haul anything for anybody at rates which, in many cases, hardly cover the cost of gasoline and oil alone. They are estimated to number more than one hundred thousand and, because they are

(TURN TO PAGE 130, PLEASE)

VICKERS HYDRAULICS

Help
HOUGH
"PAYLOADERS"
LIVE UP TO
THEIR NAME



Vickers Hydraulics help various models of the Hough "PAYLOADER" live up to their name . . . a name that means fast, low cost operation. Typical are Models HM and HA shown here; a Vickers Series V-200 Pump supplies hydraulic power. The big Model HM also has Vickers Hydraulic Power Steering.

The Vickers hydraulic equipment used on the Hough "PAYLOADERS" is representative of only one series of units built expressly for mobile and construction machinery service. For example, the new Vickers Balanced Vane Hydraulic Pumps, Series V-200, V-300 and V-400 offer the designers and manufacturers of this class of machinery a wide range of pump capacities . . . capacities of 2 to 54 gpm for hydraulic operating pressures up to 1500 psi.

Vickers Hydraulics have improved the performance of a wide variety of mobile equipment. It will pay you to look into the possibilities of using the best hydraulic pump value on your equipment. Get in touch with the Vickers office nearest you or write for further information.

VICKERS

Incorporated

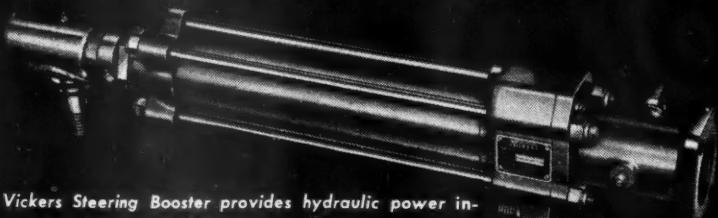
DIVISION OF THE SPERRY CORPORATION

1418 OAKMAN BLVD. • DETROIT 32, MICH.

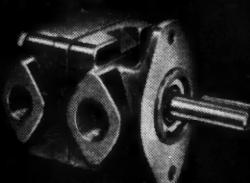
ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

4293

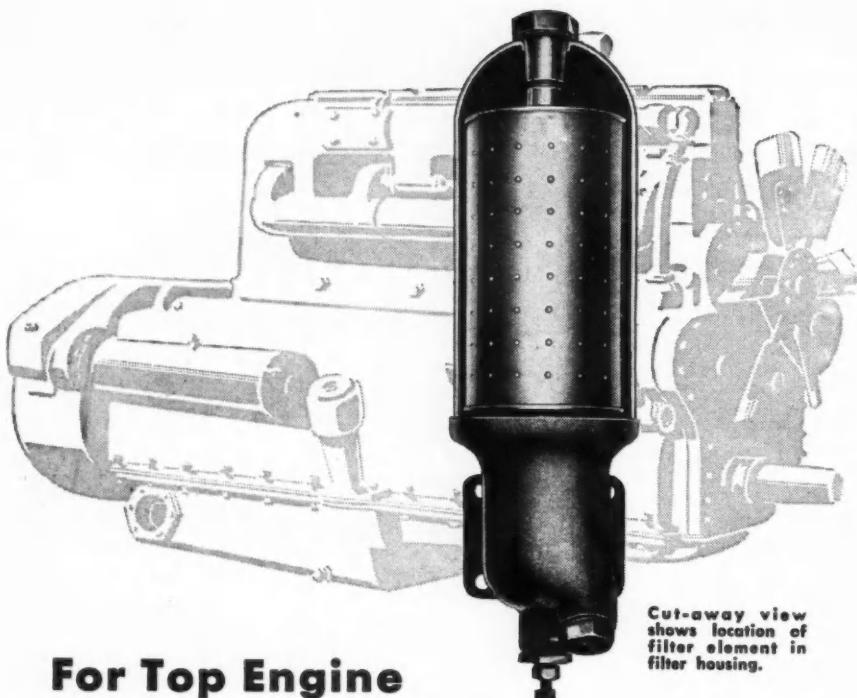
Vickers Hydraulic Power Steering is Effortless, Positive and Shockless



Vickers Steering Booster provides hydraulic power instantly at the touch of the operator's finger to meet any steering requirement for better maneuverability of loaders with heavy loads on steering axle.



This Series of Balanced Vane Type Pumps features automatically controlled radial and axial clearances that maintain high efficiency over a very long life.



**For Top Engine
Performance — Longer Life — and
Less "In-the-Shop" Expense — Use
MICHIANA FILTERS**

Operating costs are reduced through the use of reliable oil filters of adequate capacity. The engine is kept clean and performance improved for many extra hours of service. "In-the-shop time" is reduced to a very minimum.

MICHIANA Oil Filters have been in use for over a quarter century—they protect millions of horsepower of engine capacity today and are highly regarded by experienced engine builders, and by truck and bus operators whose records reveal the many advantages of MICHIANA Filters.

MICHIANA Filters are made for all types and sizes of internal combustion engines,—gasoline and Diesels. Write for Bulletin 839.

MICHIANA PRODUCTS CORPORATION
Michigan City, Indiana

**MICHIANA
OIL FILTERS**

To insure maximum efficiency
and protection, always use
MICHIANA Replaceable Elements.



Truck-Rail Controversy

Continued from Page 128

subject to no Federal regulation, they are known in the industry as "gypsies."

Several representatives of certificated carriers of foodstuffs and seafood testified that, since the I.C.C. recently ruled, in effect, that most food products come under the agricultural commodity exemption clause of the Interstate Commerce Act, "gypsy" drivers have made serious inroads into the business of certificated carriers. The witnesses said that the rate-cutting practices of "gypsies" are jeopardizing the existence of regulated carriers and, if allowed to continue, their operations would eventually deprive the shippers of regular, dependable service. The "gypsies" were accused of completely disregarding the I.C.C. safety regulations and of lacking financial responsibility in case of an accident or loss of cargo. Most witnesses requested that the clause in the Interstate Commerce Act which defines exempt agricultural commodities be rewritten so that food products, after initial movement from the farm or point of production, would come under I.C.C. regulation so that "gypsies" would be unable to operate in this field. One witness offered the alternative suggestion that the Federal Government require evidence of financial responsibility for all operators engaging in transportation for hire. By enforcement of this requirement it was hoped that most of the irresponsible "gypsy" operators would be forced to go out of business.

John L. Rogers, Interstate Commerce Commissioner, told the subcommittee that Mr. Tobin's charges concerning enforcement of safety regulations contained much truth because the I.C.C. is hampered by a lack of funds and does not have as large a staff of safety inspectors as is necessary. However, the small staff available to the Bureau of Motor Carriers is, in his opinion, doing an effective job within their limited capabilities. On the matter of triple-leasing of "gypsies" by certificated common carriers, Mr. Rogers said, "The existing situation is undoubt-

(TURN TO PAGE 132, PLEASE)

Truck
Operators
Know



**Firestone Full Advanced RIMS
INCREASE TIRE MILEAGE**

ONLY facts count with fleet operators — facts that mean lower operating costs. That's why more and more trucking companies are changing over to Firestone Full Advanced Rims. Read what operators say after trying Firestone R-5° Advanced Rims. It's typical of what hundreds of others are learning every day. Closely kept comparative cost records definitely prove that trucks on Firestone Full Advanced Rims show much lower tire-cost-per-mile than trucks on old style rims.

Firestone Full Advanced Truck Rims are entirely new — designed especially for today's long high speed runs. Five major improvements are built into these rims to give you longer original tread mileage and more retread miles. Sizes in either demountable (R-5°) or un-demountable (RH-5°) types are available for trucks of one ton capacity or over.

If you would like to know how you can lower tire costs, phone your nearest Firestone Tire Dealer or Firestone Rim Distributor.* He will gladly show you how Firestone Full Advanced Rims will save you money.

*All Firestone Rim Distributors are members of the National Wheel and Rim Association.

**5 MAJOR IMPROVEMENTS
REDUCE TIRE COSTS**

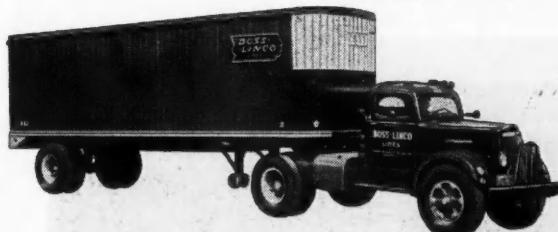
Listen to the Voice of Firestone every Monday evening over NBC

Read What Truck Operators Say:



" . . . We operate 150 pieces of equipment . . . Since changing over to R-5° Rims we have had none of the bead trouble we experienced with the old type rims. . . . We have greatly increased our mileage per tire."

KNAUS TRUCK LINES



" . . . In the past, heat blows, bead blowouts and bead wear were robbing us of ten tires per month. But in twelve months we have yet to replace a tire for a bad bead on a 5° Rim"

BOSS LINCO LINES

Copyright, 1950, The Firestone Tire & Rubber Co.

Truck-Rail Controversy

Continued from Page 130

edly undesirable but it is not quite as bad as Mr. Tobin pictures. The survey showed that 70 per cent of the authorized motor carriers operate no trucks excepting those which they own and that the larger percentage of the carriers which do lease trucks conduct most of their operations in trucks which they own."

MacDonald's Statement

ONE of the best indications of the importance of the subcommittee's investigation of our national transportation policy was the exhaustive, detailed analysis of highway transportation presented by Thomas H. MacDonald, Commissioner of the Bureau of Public Roads. The Commissioner's statement was composed of seven parts totaling 175 pages and its scope is indicated by the following section titles: (1) Growth of motor

vehicle registration and use; (2) Effects of size and weight of vehicles on the geometric design and traffic capacity of highways; (3) Axle-loading—its effect on roads and legal limitation; (4) Weight of vehicles and its effect on bridges; (5) Character of overloaded vehicles and their payloads; (6) Highway-user tax payments in relation to highway revenues and expenditures; and (7) Allocation of highway tax responsibility.

Mr. McDonald's testimony consisted of a thorough analysis of each of the above subjects in the light of history and the experiences of the Bureau of Public Roads. In addition to his formal presentation he made some general comments and recommendations which are worthy of note.

In a summary included in the record but not presented orally, the Commissioner told the subcommittee that the needs of national defense and not heavy truck use dictate construction costs and the design of our highways. He also declared that our one great national transportation need is a relaxation of undue regulation of other forms of transportation in meeting highway competition. In this connection he said that "the major problem of competition realistically stated lies in the private ownership and operation of 36 million automobiles with a capacity at one time sufficient to move the entire population and likewise at least 7 million trucks. These privately owned automobiles and trucks are not subject to regulation or control as public utilities." However, in another portion of his statement, Mr. MacDonald pointed out that the overlapping margins of actual competitive operations in the transport of the several classes of freight by highway and rail involve a relatively small percentage of motor trucks now in use.

Commissioner MacDonald expressed the conviction that, since highway transport is made up of many classes of operations, sound conclusions cannot be generalized. He also indicated that the motor vehicle has sometimes unjustly been held responsible for changes in traffic patterns that have resulted to the disadvantage of the rail lines.

END

CABLE LIFT TIRE CARRIERS

FRAMELESS
For Frameless Trailers

SIDE MOUNT
For Frame
Trailers

UNDER FRAME
For Trucks

SLANT BASKET TIRE CARRIERS

For Tank
Trailers

For Frame and
Frameless Trailers

NASH BODY-GARD BUMPERS

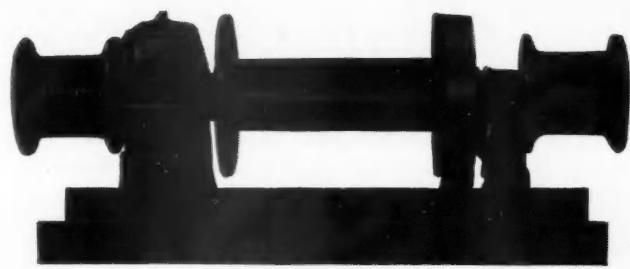
Custom built from Hi-Tensile Steel. Economically Priced. Prompt Delivery. Choice of Regular Form, Full Form or Wrap Around—5 Face Widths. Write for folder describing our complete bumper service.

**NASH
BROS.
COMPANY**

PAYNE ST. AND DEWEY AVE.
EVANSTON, ILLINOIS

132

COMMERCIAL CAR JOURNAL, October, 1950



MODEL M9-18B

OPERATION SAFETY

● MODEL M9-18B (at left)
Rated Capacity or Safe Working Load: 18,000 lbs. Ideally suited for use on 1½ and 2 ton trucks. The famous BRADEN OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE is standard equipment.



Shown here is an exploded view of the OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE. No detail has been overlooked to manufacture a precision-built brake that is unsurpassed for safety.

● Life, limb and property are often dependent upon the efficiency of a truck winch safety brake. That's why BRADEN has taken so much pains to perfect a *truly* SAFE brake that can keep the load under complete control at all times.

Ask Any Truck Winch Operator

BUY BRADEN—They Are Safer

BRADEN WINCH COMPANY
Post Office Box 1709



TULSA 1,
Oklahoma

Contact Point Failures

Continued from Page 71

They are not as deep as the peaks and valleys caused by filing, but they are undesirable.

The illustration of the radius ground tungsten shows that the contact surface is covered with tiny scratches and grooves in circular form, centering around the approximate center of the tungsten. This is caused by radius grinding. The grooves are not as deep

and the peaks are not as high as in a filed contact, but again the surface is not as good as it should be.

The picture of burnished tungsten shows what the contact surface looks like when it is polished to a high mirror finish and then highly magnified. The burnishing process is an extra operation which removes the peaks and valleys that are cut into the tungsten

at the time the disc is cut from the rod. It polishes the surface to a high finish. It is obvious that this extremely bright smooth surface is much less prone to oxidize than is a surface where the peaks of one disc come in contact with the peaks of the opposite disc.

Fig. 5 shows at the top a high-speed contact and at the bottom a picture of a heavy-duty contact. It is always desirable to use a heavy-duty contact when the contacts are called upon to operate at not more than 150 times per second. Heavy-duty contacts are therefore suitable for all 4 and 6-cylinder engines, but only under special structural conditions should heavy contacts be used for 8-cyl engines.

If a heavy-duty contact is called upon to operate at too high a speed, the contacts will fail to follow the cam. The inertia of the contact being forced open by the cam will cause it to remain open longer than it should, thus depriving the ignition coil of flow of current through the full portion of the cycle during which time it should build its magnetic flux.

The movable contact arm should never be overburdened with weight whether it be for high-speed or low-speed operation. Contact arms with tungsten of the standard diameter of .150 will operate just as well as contacts of a larger diameter when all conditions of the electrical system are just right. However, increasing the diameter of the tungsten to .187, such as used in many heavy-duty contacts, provides better dissipation of heat caused by the passage of current and by the electrical arc.

Spring—Spring tension should be held between 18 and 24 oz. Excessive spring tension will cause the fibre rubbing block to wear excessively. Light spring tension may not close the contacts properly, particularly at high speeds.

When contacts bounce in closing, the magnetic field of the ignition coil will not build to maximum. This is well illustrated by Fig. 6, in which the upper graph shows (1) the point at which the contacts close and the current flows into the ignition coil; (2) the point where the contacts open and the collapse of the magnetic flux of the coil. The lower graph of Fig. 6 shows that when the contacts close and bounce open, and then close and bounce open again, before they finally close, the saturation of the coil core is not as great. The loss in saturation is clearly marked. This loss in saturation weakens the spark at the spark plugs.

All distributors breathe, due to expansion of air when hot and contraction when cold. All air carries moisture.

(TURN TO PAGE 136, PLEASE)

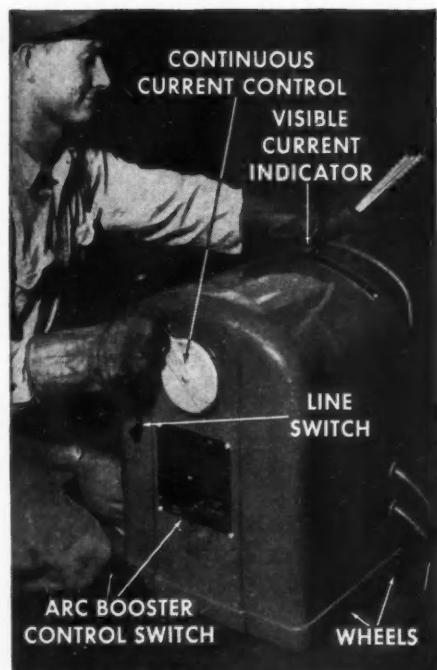
SPEEDS REPAIRS



Reinforces rear gate. After flattening out bulge, fleet operator welds on stiffeners of $2\frac{1}{2}''$ x $2\frac{1}{2}''$ angle.



Repairs damaged body by adding on new skin covering. Fast, easy work for the "Fleetwelder 200 AC."



Compact, easy to move around, simple to install Lincoln "Fleetwelder 200 AC."

- **GIVES FASTER, EASIER WELDING** on a wide range of work... thin or heavy metal.
- **HAS BROAD CURRENT RANGE.** NEMA rated 30 to 250 amps... handles $\frac{5}{16}''$ to $\frac{1}{4}''$ electrodes.
- **AUTOMATIC ARC STRIKING** with "Arc Booster" eliminates electrode sticking.
- **MAKES STRONGER WELDS.** "Arc Booster" gives full penetration instantly.
- **RUGGED CONSTRUCTION** withstands heavy overloads and physical abuse.
- **SELLS FOR LESS...** price is lower than any arc welder of comparable capacity today.

To simplify your repair jobs and cut costs, why not investigate for yourself the money-saving benefits of the "Fleetwelder."



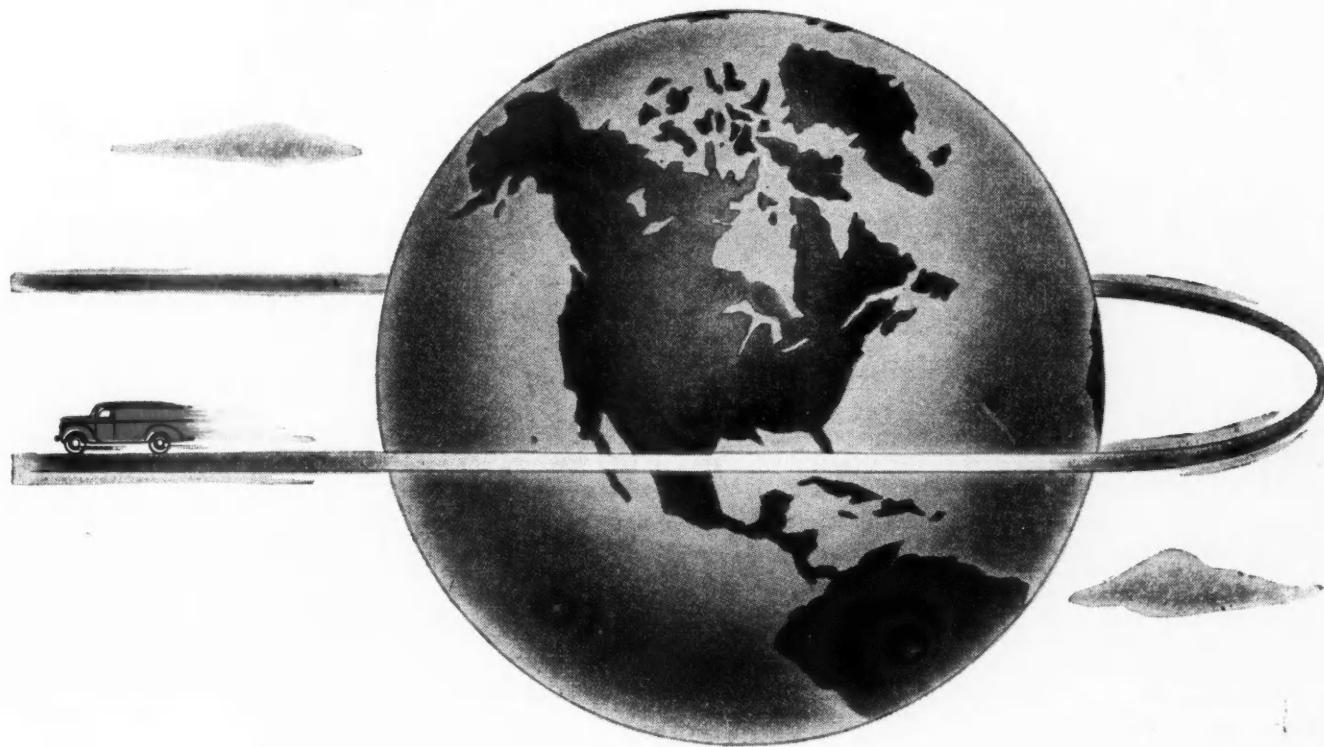
GET
THE
FACTS

Send for free "Fleetwelder 200" Bulletin 1301, write,
THE LINCOLN ELECTRIC COMPANY
Dept. 325, Cleveland 1, Ohio

Sales Offices and Field Service Shops in All Principal Cities

Around the world...

and still pumping



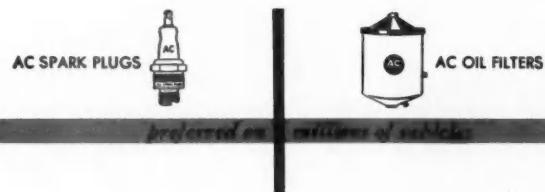
Do you know that the *average* AC Fuel Pump, on trucks and buses, travels the equivalent of a trip around the world before its efficiency is affected?

And that's the *average*, including some mighty tough service. Many AC's stay young much longer.

That's why so many fleet owners have found it advantageous to standardize on AC Fuel Pumps. They offer reliability which is price-

less, in vehicles which must always be ready to go. And they keep replacement costs satisfactorily low, because of the long mileage that is built into them.

With periodic inspection and cleaning—and replacement at regular intervals—the AC Fuel Pump will give you the matchless performance that has made it the leader for 23 years.



AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

COMMERCIAL CAR JOURNAL, October, 1950

Contact Point Maintenance

Continued from Page 134

which in turn causes rust. The atmosphere within a distributor is always charged with a certain amount of ozone, even though it may be ventilated. Ozone is generated by the passage of high tension current over the spark gap between the rotor and the distributor cover segments. The combination of the moist atmosphere and ozone has a strong tendency to rust the contact

springs. If they rust excessively, they are apt to break. Stainless steel overcomes this trouble. Stainless steel springs are usually found on heavy-duty contacts.

Floating springs have an advantage over springs that are riveted to the contact arm. Frequently the binding post to which the spring is attached is not exactly parallel to the post on which the contact arm is mounted. This is due to slight inaccuracies in production. When the spring is tightly riveted to the contact arm it has a tendency to twist the arm and wear the bushing on

the top at one side and on the bottom at the other side. A floating spring eliminates this trouble.

Conductivity—There are two means of carrying the current from the binding post of the distributor to the body of the contact. One is through the steel spring; the other is through a copper conductor strip on the contact arm. Spring steel is a notoriously poor conductor. But what is more important is the fact that it is prone to oxidize. This creates resistance at the connections of the spring at both ends; at the binding post and where the spring is riveted to the body of the contact arm. A copper conductor strip is much less apt to oxidize. It, therefore, assures continued good conductivity from the binding post right on through the contact arm.

Bushing—Heavy-duty bushings lend themselves to much more accurate machining of the hole because they are strong enough to permit the cutting tool to remove material without distorting the bushing during the final operation of boring or reaming to size. This gives an improved bearing surface.

It is obvious that many road failures can be avoided by giving proper attention to the choice of ignition contacts used and by proper attention to other elements in the electrical system that affect contact life and performance. It is also obvious that more frequent and more careful attention to ignition contacts will result in operating economies due to smooth motor performance, which reduces wear of motor parts and even other parts as well. Even gas mileage can be increased by keeping the contacts in the best of condition. There is probably no other part in the engine that offers such a good and frequent opportunity for all around improvement in performance.

END

Please resume your reading on P. 72

M-H Lands T-C Order

The Marmon-Herrington Co., Inc., has just received from the Chicago Transit Authority an order for 349 Marmon-Herrington trolley coaches at an aggregate cost of \$5,979,417.00. Delivery of the trolley coaches is to start around February 1st, 1951 and is to be completed by the end of the year.

PC Man Elected NBA Pres.

Arch Hindman, supervisor of advertising services for the Perfect Circle Corp., Hagerstown, Ind., was elected president of the National Boxing Assn. recently at the organization's 31st annual meeting. Hindman has been a boxing promoter, manager and referee since his start in Richmond, Ind., in 1932.

THE Servis Recorder Helps Prevent Accidents — SAY INSURANCE COMPANIES

These are from
actual letters:

- "You are quite right—we do insist that quite a few of our assureds adopt the Servis Recorder in order to eliminate the driver stopping an hour or so and then getting out on the highway and burning up the road in order to arrive on schedule. The latest lines on which we have required Recorders are the _____ of Chicago and _____ of Detroit."
- "Please get in touch with the _____ and try to get the Servis Recorder as standard equipment upon their units, as we have been having some difficulty on this line and I believe it would be of material assistance to them in the reduction of accidents if they would equip their outfits with Servis Recorders and then make an intelligent use of them."
- "I see that you were able to sell the _____ quite a few recorders, and there has been a marked improvement in the operation of this line."
- "We will appreciate it very much if you will send your pamphlet 'About Speeding and Accidents' to the _____ Company of Detroit, _____ of Indianapolis, and _____ of Kansas City. I would certainly be pleased if they would install Servis Recorders."

Send for our "ACCIDENTS" folder.

THE SERVICE RECORDER CO.

1375 Euclid Avenue, Cleveland 15, Ohio

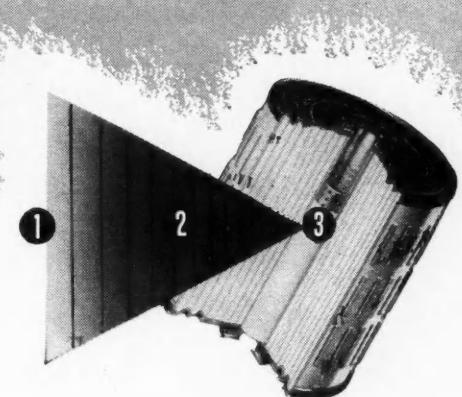
"Making Up" Wasted Time Causes Most Speeding—and Speeding Causes Most Accidents.



The Servis Recorder
Helps Prevent Speeding and Accidents

"3-Dimension" Filtration STOPS "DANGER DIRT" TO $\frac{2}{10}$ OF ONE MICRON!

Keeps Oil Cleaner *between* Oil Changes



Here's proof of how thoroughly Walker Oil Filters remove dust, dirt, metal particles and other engine-made abrasives from the oil stream . . . proof that Walker keeps oil cleaner in the critical period between oil changes.

Walker "3-Dimension" Filtration actually removes abrasives as small as $\frac{2}{10}$ of one micron—gives engines a 25-to-1 safety factor over the danger size of contaminants.

Only Walker has "3-Dimension" Filtration because Walker alone has the patented *Laminar* construction. It can't channel . . . it won't by-

pass. It combines into *one* cartridge the three basic essentials of good filtration—surface, depth and progressive—multiple filtration to take out the many, different kinds of oil contamination, including moisture.

Certainly you should sell your customers a periodic oil change to protect against oil oxidation, dilution and deterioration. But, *equally important*, install a new Walker Oil Filter Cartridge to keep the oil clean between changes—to give them the added protection, the greater security of Walker "3-Dimension" Filtration.

WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN

Oil Filters • Exhaust Silencers • Jacks • Lifts

OIL FILTERS

WITH PATENTED
*Laminar**
CONSTRUCTION
*TRADE MARK

Cook Bros., Develop H-D Truck

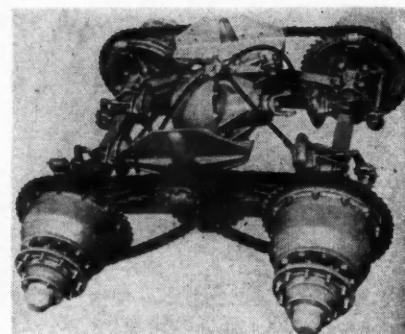
Continued from Page 138

Steering is through a Ross TA71 semi-reversible cam and twin lever steering column. All wheels are Budd, 10 stud with a 11 1/4-in. bolt circle.

Brakes are air actuated employing Bendix-Westinghouse equipment. The electrical system consists of two 120 amp-hr Delco Remy 12-volt batteries with a 55 amp generator.

Truck-Trailer Train

THE TRUCK body shown in the illustration is optional. Made of hi-tensile steel, it is 13 ft long, 7 ft 4 in. wide with 34 in. sides, and has a capacity of 9 cu-yd. The hoist, also optional, is a C-B Model 272 twin telescopic type.



C-B center chain drive optional on "C12" truck, is kept in alignment through adjustable radius rods, springs rollers and pads. Little or no weight transfer, is claimed by manufacturer, when brakes are applied

with HYPRESSURE *Jenny* STEAM CLEANER

I know! I thought we had ours trimmed to the bone. Our mechanics were consistently equaling or bettering time study standards on most jobs. Yet I knew they had to dig through mud and grease to find parts, and were constantly wiping grease from their hands and tools. I figured if I could save that lost motion we could do even better.

Well sir, we got a Hyppressure Jenny Steam Cleaner and began to clean every job first thing when it came into the shop. You may think I'm exaggerating, but our figures show that such lost motion was costing us 25% to 40% of our mechanic's time! I know the figures are right because our cost per job has dropped about the same amount.

I don't know how we ever got along without a Hyppressure Jenny before, because it is the most profitable equipment we ever bought. Why don't you write for a copy of the new booklet, "1001 Ways To Extra Profits" and see how Hyppressure Jenny can save your time and money? It's free for the asking—no obligation. Write today!

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING COMPANY
"Serving Since 1892"

212 BOX 90

CORALPOLIS, PA



The transfer trailer is a Cook Bros. Type 76B, Model 2PL with a 234-in. wheelbase. It is 13 ft long, 84 in. wide with 31-in. sides and has a capacity of 8 1/2 cu-yd. The transfer mechanism is hydraulic.

Weight Specifications

Truck chassis with cab	12,310 lb
Truck with body, hoist	15,950 lb
Truck gvw (Approximate)	46,000 lb
Truck payload	30,000 lb
Transfer trailer and body	8,010 lb
Truck-trailer gvw	76,800 lb
Truck-trailer payload	52,000 lb
Truck-trailer tare weight	23,960 lb

END

N. Y. Moves to Enforce Diesel Fuel Tax

The New York State Department of Taxation and Finance has initiated a new drive for full compliance with the State's motor fuel tax law and regulations by both sellers of Diesel fuel and Diesel truck operators. Users of Diesel-powered trucks within the state are considered "distributors" and required to register with the Miscellaneous Tax Bureau. Monthly reports of Diesel fuel purchases are required together with payment of the tax of 4 cents per gallon.

New Corp. to Run Rubber Plant

Ten rubber companies outside the tire division of the industry have jointly set up a new corporation to reactivate and operate the government-owned \$7,000,000 synthetic rubber plant in Louisville, Ky., under contract with the Reconstruction Finance Corp.

Known as Kentucky Synthetic Rubber Corp., participating companies are:

American Hard Rubber Co., New York, N. Y.; Boston Woven Hose & Rubber Co., Cambridge, Mass.; Brown Rubber Co., Inc., Lafayette, Ind.; Dryden Rubber Div., Sheller Mfg. Co., Portland, Ind.; Goodall Rubber Co., Trenton, N. J.; Hewitt-Robins, Inc., New York, N. Y.; Raybestos-Manhattan, Inc., Passaic, N. J.; Simplex Wire & Cable Company, Cambridge, Mass.; Sponge Rubber Products Co., Shelton, Conn.; Thiokol Corp., Trenton, N. J.

GENUINE

BOHNALITE

AUTOTHERMIC PISTONS

SERVICE DIVISION HEADQUARTERS
HOLLAND, MICHIGAN



Silent AUTOTHERMIC PISTONS Start Quiet . . . Run Quiet . . . and Save On Gas and Oil!

You can't keep a piston quiet if it is fitted loosely in the bore to allow for expansion. If its skirt collapses it loses its fit. Nelson Bohnalite Autothermic Pistons are the proven solution to both problems, because they employ steel struts, paralleled by aluminum, that act as automatic thermostats to control piston fit, and maintain the same clearance—hot or cold!

When you put famous Nelson Bohnalite Autothermic Pistons in an engine, you provide your customer with the pistons scientifically designed for unequalled quietness, strength, long life and fuel economy . . . the pistons that show no loss in skirt diameter in long tests of 50,000 miles and up . . . the pistons conclusively proven in actual use by automotive manufacturers!



-  Pistons
-  Engine Bearings
-  Reconditioned Connecting Rods
-  Rebabbitted Connecting Rods
-  Piston Pins
-  Water Pumps
-  King Bolts
-  Valve Springs
-  Rod Dippers
-  Water Tubes
-  Babbitt Metal
-  Bolts
-  Nuts
-  Shims
-  Solders

BOHN ALUMINUM & BRASS CORPORATION

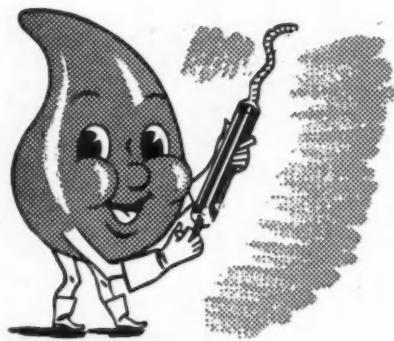
Executive Offices • Detroit 26, Michigan
Service Division, Holland, Michigan



QUESTION:

What grease
is ideal both for
water pumps
and for

CHASSIS FITTINGS?



ANSWER:

Shell Retinax "A" Grease

5 BIG SAVINGS FOR FLEET OWNERS:

1. **Lower consumption.** Users report up to 50% savings in the amount of grease required per "grease job."
2. **Minimum inventory.** Shell Retinax "A" replaces 4 separate greases.
3. **No costly errors** are possible. Operators cannot apply wrong grease.
4. **Quicker servicing** is achieved because there is no time wasted changing guns.
5. **Minimum equipment** required since multiple guns and dispensers are eliminated.

WILL NOT FAIL IN WHEEL BEARINGS . . . STAYS LONGER IN CHASSIS FITTINGS . . . RESISTS WASHING . . . IDEAL FOR WATER-PUMP SERVICE . . . ADDED PROTECTION FOR UNIVERSAL JOINTS.



SHELL OIL COMPANY

50 West 50th St., New York 20, N. Y., or
100 Bush St., San Francisco 6, California

Please send me the full story of Shell
Retinax "A" Grease for fleet lubrication.

Name _____

Address _____

State _____

Trucks Pay Heavy Toll

Trucks (over 7000 lb. gvw) and buses accounted for only 24 per cent of the traffic over the Pennsylvania Turnpike during the fiscal year ending May 31, 1950, yet contributed \$4,622,065 in tolls. This represents 64.4 per cent of the total tolls taken.

The percentage of truck traffic is a little higher than the average of 21 per cent for other main rural highways checked by the Bureau of Public Roads. This is probably accounted for by the fact that the Turnpike offers a better traverse of the mountains than do the paralleling public roads.

**Budd Wheel
Distributors
provide the same
service described in
this advertisement**

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Wheel, Rim and Parts Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHATTANOOGA—Harris Automotive Service, Inc.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
EVANSVILLE—Auto Wheel & Rim Service Co., Inc.
FARGO—Wheel Service Company
FORT WAYNE—Wheel & Rim Sales Co.
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel & Equipment
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees', Inc.
PROVIDENCE—New England Wheel & Rim Co.
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Rim Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees', Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT

CLEVELAND—C. O. Brandes, Inc.

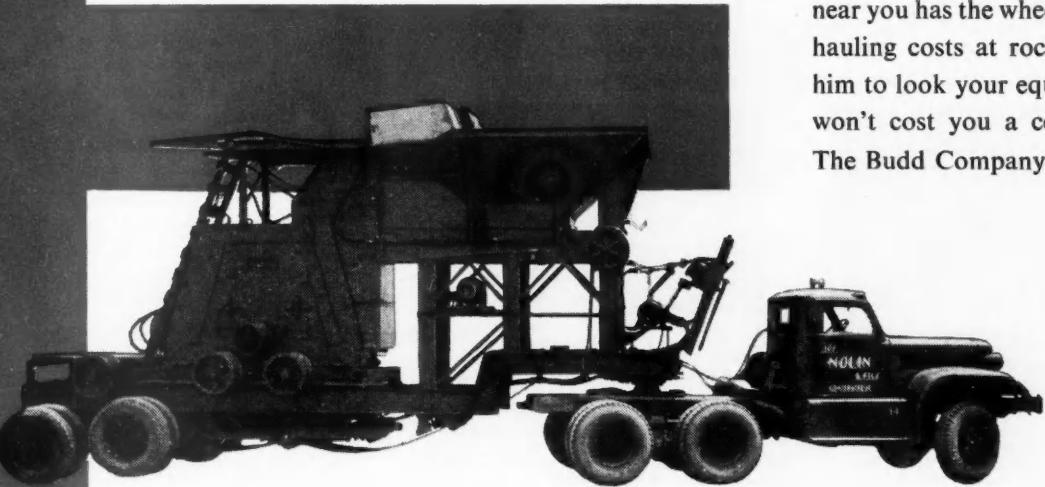
CANADA

CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Automobile Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.

"He's going right past the college & he
says we'll find plenty of comfortable
seats in the rear of the truck."



Monsieur Nolin Got An Idea



Jos. Nolin & Fils, "constructeurs," of St. Hyacinthe, Quebec, had a stone crusher. Stationary job. Then they got the idea of taking the stone crusher to the stone, instead of hauling the stone to the crusher. It's a dainty little object—weighs 85 tons. They took up the project of making it mobile with General Automobile Equipment, Montreal distributors for Budd wheels.

Monsieur Bourgault, General's wheel division manager, reached into his stock and came up with a set of completely standard 20 x 8.0 ten-hole Budd wheels, and now the stone crusher, all 85 tons of it, goes wherever there's stone to be crushed. So you can see where an ordinary highway trailer would be duck soup for wheels that strong.

As we've said before: They give Budd wheels the darndest jobs. But whether your job is unusual, or as conventional as delivering a loaf of bread, the Budd wheel distributor near you has the wheels to keep your hauling costs at rock bottom. Ask him to look your equipment over—won't cost you a cent.

The Budd Company, Detroit 14.

... Statistics

Continued from Page 66

could be stretched to produce full value for the expense.

The procedure to be followed in the determination of what, when, and where to do something about betterment of conditions is a puzzling problem. The answer is simple. Statistics—based on the results of actual operations, showing costs, principally, which may be compared with previous periods or with

similar operational functions of others.

Everyday accounting records form the source of the greater portion of statistical data.

It is the purpose of this report to attempt to overcome some of the objections to statistics and to suggest simplified forms for recording basic data and information in order that necessary or desired statistics may be readily obtained without endless research.

This statistical plan is designed primarily for smaller Class I carriers but will function equally well for all classes of motor carriers of property. In fact, Class II and III carriers should ex-

perience no difficulty whatsoever in maintaining the records suggested.

Many carriers feel that profits do not justify the installation and maintenance of tabulating or accounting machines, or that the accounting and statistical requirements do not warrant the use of mechanical equipment.

The Daily Revenue Report forms the basis for accounting records and also for statistical compilations. Summary of Daily Revenue Reports for the month may be posted direct to the general ledger. In the case of statistics it will be necessary to convert pounds to tons when required on statistical reports.

In connection with the Vehicle Mileage Record form, the following brief description of classification applies.

Line Haul Equipment (Owned, Leased, and Purchased Transportation Vehicles) Includes vehicles operating terminal-to-terminal, and those operating peddle trips. Vehicles assigned to over-night city runs which are also used more or less regularly during the day in the carrier's regular pickup and delivery service should be classified as line haul.

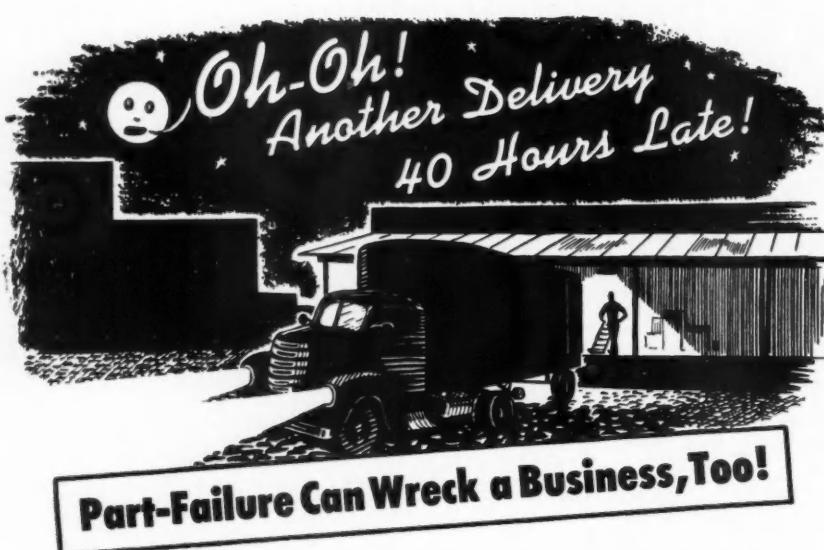
Pickup and Delivery Equipment (Owned, Leased, and Purchased Transportation Vehicles) Includes vehicles primarily employed in pickup and delivery service in pickup and delivery of the carrier's intercity freight within a terminal area. Also includes vehicles used in local cartage service. The fact that such vehicles are used for occasional trips beyond the limits of a terminal area does not affect their classification as pickup and delivery vehicles. Pickup and delivery vehicles do not include vehicles primarily employed in making "peddle trips." "Peddle trip" means an over-the-road trip and the picking up and delivering of freight at shippers' or consignees' doors outside the terminal area.

The use of any good statistical plan will develop the following information:

Revenue and expense per cwt.
Revenue, and expense per mile.
Miles per gallon of fuel, by units.
Gasoline or diesel fuel cost per mile.
Repairs and servicing cost per mile.
Terminal expense per cwt.
Average load factor.
Average length of haul.
Ratio of truckload to total freight.
No. of truckload shipments.
No. of less than truckload shipments.
Average wt. per truckload.
Average wt. per less than truckload.
Average column rating of truckload traffic.
Average column rating of less than truckload traffic.
No. of accidents per mileage block.

END

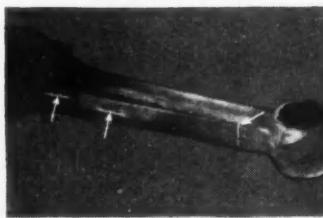
Please resume your reading on P. 67



The Defect Should Have Been Found During Overhaul by Inspection with MAGNAFLUX-MAGNAGLO

A cracked part returned to a truck, bus, or car at overhaul invites a dangerous or expensive breakdown. The delay may be even more expensive in lost business—and so unnecessary, when MAGNAFLUX-MAGNAGLO inspection will find every defect quickly and cheaply, prevents failure before it has a chance to happen.

When you use MAGNAFLUX-MAGNAGLO inspection during overhaul you can be sure defective parts will not be returned to service. Failures of crankshafts, axles, blocks, spindles and other vital parts can be prevented—by keeping them out of service. Good parts can be proved good, and returned to reliable service. Get complete details today.



Fluorescent Magnaglo indications mark the serious non-visible fatigue cracks in this connecting rod.



Magnaglo inspection of this steering spindle gives clear indication of otherwise invisible serious cracks that could cause failure.

FOR SAFETY... ECONOMY... RELIABLE SERVICE

Write today for complete information—for you, and the shop to serve you

*Magnaflux-Magnaglo® Trade Marks of Magnaflux Corporation applied to its equipment and materials for magnetic particle inspection.

MAGNAFLUX CORPORATION

5908 Northwest Highway, Chicago 31, Illinois

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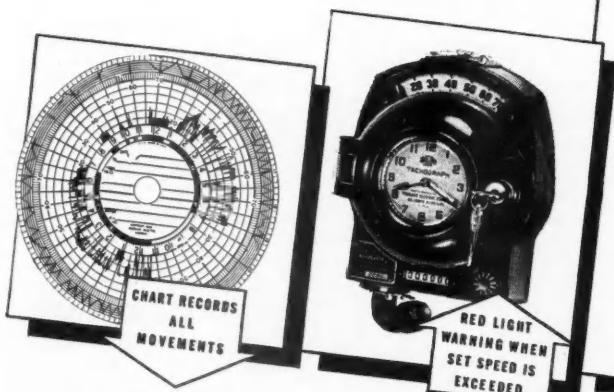


Our Drivers Want TACHOGRAPHHS

...They verify their Good Driving Practices



Fleet operators and their drivers both gain as the result of the information supplied by the Tachograph. This unique recording speedometer mounts on the dashboard and replaces the conventional speedometer. At the beginning of each run a blank chart is placed in the instrument and from there on every movement of the truck is automatically recorded. The data recorded on the charts helps discourage costly driving habits which result in lost time, unnecessary wear on tires, and excessive consumption of gas. Tachograph recordings are a boost for careful drivers and a valuable guide in helping them improve their efficiency.



- WHEN ENGINE STARTED
- HOW FAST VEHICLE TRAVELED
- HOW LONG ENGINE IDLED
- WHEN VEHICLE STOPPED
- WHEN VEHICLE WAS IN MOTION
- DISTANCE TRAVELED BETWEEN STOPS

DISTRIBUTED BY

Wagner
ELECTRIC CORPORATION

TRUCKING **Tuohy** CORPORATION

733 ROUTE 17
CARLSTADT, NEW JERSEY
RUTHERFORD 4-0776-7

November 16, 1949

We installed our first Wagner Electric Tachograph Recorder in July 1948. Since that time, we have installed them in all of our tractor units, mostly at the insistence of our drivers. Our initial reason for the installation of the recorder was to help the driver keep his schedule without unnecessary speeding to make up for lost time and to prove as a standard for gauging a driver's actions on the road. This last reason was greatly appreciated by our Insurance Company Engineer. After the first few were installed, the men all recognized the value of the Tachograph Recorder and insisted that their own tractor have one installed. I was rather amazed and questioned a few men to learn the reasons behind the demand. Here are a few:

1. Timely deliveries according to schedules without any doubt being passed as to the reason for a tardy one. The facts are there.
2. It involved in an accident, the record will substantiate the driver's statement as to speed of travel, time, etc.
3. As a factor in the computation of accurate gas mileage.
4. Elimination of unnecessary operating delay by visual recorded charts that point out the frequency of such costly delays.
5. Aid in completing the ICC Driver's daily log.

It is therefore my personal belief that the Wagner Electric Tachograph is definitely a "must" in our operation and I think that the average fleet owner will substantiate my statement if he once installs one or two in a fleet.

Very truly yours,
TUOHY TRUCKING CORP.
Francis J. Tuohy
Francis J. Tuohy, Secretary

Wagner Electric Corporation

6476 PLYMOUTH AVE., ST. LOUIS 14, MO.

Please send a copy of Bulletin SU-3B.

Name and Position _____

Company _____

Address _____

City _____ State _____

We operate _____ Vehicles _____
(NUMBER) _____

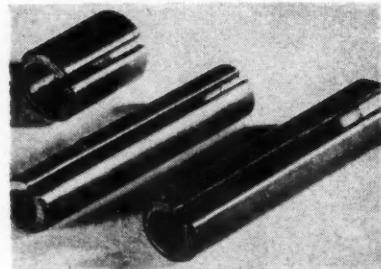
550-6

New "Rollpin" Replaces Dowel, Tapered Pins

THE ROLLPIN, a new development of the Elastic Stop Nut Corp. of America, is an all-purpose pressed-fit, self-locking pin with chamfered ends, engineered to replace the variety of dowel, pivot, tapered and grooved pins, which ordinarily require a key

or some supplementary fastening method to hold them in place.

The pin, itself, is a piece of metal rolled into the shape of a cylinder with a gap or slot which parallels the long axis of the hollow cylinder. Both ends of the cylinder are chamfered, or



Shown in this unretouched enlarged photograph are three of the thirteen diameter sizes of the Rollpin. The short pin at upper left is $\frac{3}{4}$ -in. long, and fits a hole diameter of .500 in.

A NEW DIMENSION IN CLUTCH SERVICE

You get *more miles* of trouble-free service from these new, complete clutch units. Take *less time* to install, too! And you're *sure* of full clutch release and smooth clutch engagement.

Cost the Same . . .

. . . although you pay only the *regular* price for the new Accurate Powerflex clutch plate and the rebuilt Re-Nu assembly, you get the *PLUS VALUES* of a matched, mated, tested, balanced, complete clutch unit at *no extra cost!*

Write for **FREE** Catalog & Prices!



New POWERFLEX Plate

PACKAGED TOGETHER WITH A

Rebuilt RE-NU Assembly

MATCHED • MATED • TESTED

BALANCED • COMPLETE

CLUTCH UNITS



**EXCHANGED OR SOLD OUTRIGHT!
FOR ALL POPULAR CARS AND TRUCKS**

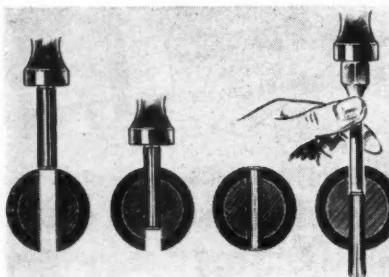
Accurate PARTS MFG. CO. 12435 Euclid Ave.
Cleveland 6, Ohio
MANUFACTURERS OF THE POWERFLEX CLUTCH PLATE
REPLACEMENT UNIT CO. 1505 Rockwell Ave.
Cleveland 14, Ohio
REBUILDERS OF GUARANTEED CLUTCH ASSEMBLIES

beveled, so the pin can be driven and compressed into a hole that is, by design, smaller than the diameter of the pin. The slot permits compression of the cylinder as the pin is driven in, and the resulting tension, caused by the constant pressure exerted by the Rollpin against the walls of the hole, secure it in position even against extreme vibration and shock.

The Rollpin is simply and rapidly inserted with hand tools. It can be simply removed by driving it out with a drift pin or pin punch. The pin, too, retains its locking characteristics through repeated insertions, and its shear strength is said to exceed that of a cold rolled pin of equal diameter.

Applications of the Rollpin fall into the following five general groups: as fastening pins, pivot or hinge pins, cotter keys, shafts, and dowels. As a fastening pin, it replaces tapered pins, pressed-fit pins, keys, and other fasteners to secure pulleys, gears, and levers to shafts. As dowels or locating pins, these new pins are being applied as positioning dowels in the lubrication pump assembly of the Cummins H-600 diesel engine.

Elastic Stop Nut Corp., Union, N. J., is currently manufacturing Rollpins in thirteen sizes to fit hole diameters ranging from .078 up to .500 in.



The first picture at the left shows how pin starts in a pre-drilled hole. The second shows pin partially driven in. It compresses as it is driven and adjusts to normal hole tolerances. The third shows pin secured in place, fully compressed exerting pressure against the hole walls. The last shows removal of pin by driving it out with a punch

● Free offer to fleet owners with a problem*

* Offer limited to areas in which Pure Oil products are sold.

Give us a pint of your used oil

**A Pure-Sure Analysis will tell you why you may have
...high oil consumption
...harmful engine deposits
...excessive fuel consumption
...short oil filter life
—in your engines!**

Hundreds of fleet owners have used Pure-Sure Analysis to find out what's going on inside their engines! Here's how it works.

Give us a pint of your used oil. It will be sent to Pure's modern laboratory for careful analysis. We'll tell you why your operating costs may be excessive because of dirty engines, high oil consumption, low oil pressure, or excessive engine wear. A Pure-Sure Analysis can provide the answers to these and other important questions, such as excessive fuel dilution, moisture contamination, and faulty fuel combustion.

To get such an analysis of your used oil at no cost, see your Pure Oil salesman, or phone your nearest Pure Oil office today!

THE PURE OIL COMPANY • General Offices: Chicago

BRAND-NEW



Purol H.D.

Pure offers a great new line of fleet lubricants, featuring Purol H. D. Motor Oil, the oil that can "take it"!

New Purol H. D. meets the exacting requirements of heavy-duty service in Diesel or gasoline-powered trucks, tractors and buses.

Ask your Pure Oil salesman or local Pure Oil office for the full story on Purol H. D., or any other of the great new Pure Oil lubricants for fleet and commercial users: Purol, Purol Heavy-Duty and Purol Super Heavy-Duty Motor Oils; Purelube Greases and Gear Lubricants; and Purol Torque-Draulic Oil.

— the oil that can take it!



Be sure with Pure • Fleet Lubricants • Gasolines • Tires, Batteries, Accessories

COMMERCIAL CAR JOURNAL, October, 1950

INTERNATIONAL Refrigerates Metro Bodies

Cooling range distinguishes two body types available, 10-32 and 35-50 deg F



Refrigerated Metro used in frozen food delivery, cools down to 10 deg F



LABORATORY-TESTED for consistent quality

SOL-SPEEDI-DRI

SLIPPERY FLOORS VANISH when you use Sol-Speedi-Dri... America's original and largest-selling oil and grease absorbent. Sol-Speedi-Dri gives you a better-looking shop and helps reduce fire hazards too. Production controls and selective mining insure a fine product... laboratory tests safeguard its consistent quality. Available from jobbers everywhere. Mail coupon for big FREE sample!

SPEEDI-DRI CORP., 210 W. Washington St., Philadelphia 5, Pa.

Warehouse stocks maintained in principal cities of the United States and Canada.

Inquiries in New York, New England, and New Jersey should write to Speedi-Dri Corp., Everywhere in U.S. to Waverly Petroleum Products Co., 1724 Chestnut St., Philadelphia 3, Pa.

FREE SAMPLE:

Fill out the coupon and mail today for big, free sample.

Name _____

Address _____

City _____

State _____

CCJ 10-10



AUTOMATIC, packaged refrigeration designed for specific cooling ranges of 10 to 32 and 35 to 50 deg F. is now offered in the International Harvester multi-stop delivery truck equipped with refrigerated Metro bodies. The two available body models, both have a max gvw rating of 10,000 lb but differ in their interior cubic capacity, because of a difference in the thickness of insulation employed.

The 256.4-cu ft capacity model employs a 6-in. thick insulation and is designed to cool to the low temperature range of 10 to 32 deg F. The 272.5-cu ft capacity model uses a 4-in. thick insulation and cools to the medium temperature range of 35 to 50 deg F.

Refrigeration Units

TWO refrigeration units are available for installation in the Metro bodies. Model MTR is a package made up of a gasoline engine, refrigeration compressor, blower type cooling coil and related parts. The complete assembly, controls and all, is mounted in an integral frame and can be installed or removed as a complete unit. The only connections to the vehicle are to the body, the gas tank and to the battery.

Model MTRE is essentially the same unit as Model MTR with the addition of an electric motor and suitable motor controls to operate the unit electrically at the option of the operator.

Both units are International designed and built and are powered by an IH Cub, 4-cyl, water cooled, 9-hp gasoline engine driving a 4-cyl compressor. The evaporators are of the blower type with a 13 3/4-in. electric fan, radiating area of 138 sq ft and 5/8-in. tubing. Each unit contains 6 lb of Freon-12 refrigerant. The electric motor used in Model MTRE is a 2-hp, 220-230-volt, single phase A.C. unit. Overall dimensions of each unit is 24 in. wide, 36 in. (TURN TO PAGE 154, PLEASE)



re cost-per-mile on mammoth trailer trucks and fleets.

—bringing extra-deep mileage tread built to stay cool and trouble-free without limits as to speed.

And as the record books tell this incredible truck tire story, men of the trucking world now come to us with their endless demand, *doubling Raymaster sales in a single year, ON DEMAND ALONE.*

So here you have it—for supreme, high-speed, heavy-duty mileage—the ever-growing first choice of America's fast truck transportation system. **DEMANDED and sold on complete proof of comparative performance.**



DISCOVERY CITATIONS

from the RAYMASTER ROLL CALL

"Lowest cost-per-mile in our experience."—CHICAGO EXPRESS, INC.

"In 130° desert heat . . . across below-zero altitudes . . . better than any tire we ever used."—NAVAJO FREIGHT LINES, INC.

"12,000 more tire miles per unit."—ARROW MOTOR TRANSIT.

"On tandem-axle semi-trailers . . . only 1 1/4¢ per tire mile."—MEADOWS TRANSFER COMPANY.

" . . . eliminated costly road failures."—BURNS TRUCKING CO.

A telephone call does it! Ask your U. S. Royal Distributor for complete demonstration proof of Raymaster savings on your own trucks.

UNITED STATES RUBBER COMPANY

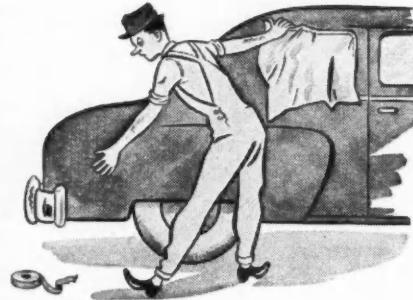
RAYMASTER

New Booklet!

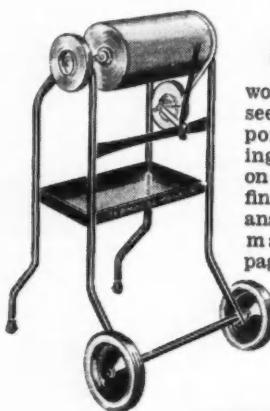
SHOWS YOU HOW TO
SPEED REPAINT
SCHEDULES-
CUT COSTS-
WITH HELPFUL TIPS
ON MASKING!



Want to take the mess out of masking? You'll know how when you read page 5!

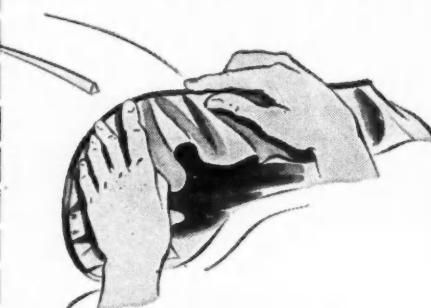


Oh that tape! Want a convenient way to keep it at your finger tips? See page 13!



and...

would you like to see a complete, portable masking department on wheels? You'll find it—and the answer to better masking—on page 10!



For an easy, time-saving tip on masking headlights—just turn to page 18!



Send for your
FREE copy today!

Twenty-five pages of masking procedure, complete description of the PERMACEL Portable Masker. Write Dept. 11T at address below.

Permacel-77[®]

MASKING TAPE

INDUSTRIAL TAPE CORPORATION • NEW BRUNSWICK, N. J.

International . . .

Continued from Page 150

long, 54 in. high. Weight of Model MTR is 656 lb and MTRE is 815 lb.

The temperature controls are automatic and once temperature is selected no further attention to controls is necessary.

Body Specifications

INSULATION materials used in the body construction are Ultralite, a light weight yellow colored glass fiber and Bubatex, a synthetic rubber product. The payload compartment liner is galvanized steel with either aluminum or stainless steel optional.

The inside body dimensions for the 256.4-cu ft model (low temp range) is 60-in. max height, 64-in. width and an average length of 133 in. For the 272.5-cu ft model (medium temp range) the max height is 61 1/2 in.; the width is 67 in. and the average length is 133 in.

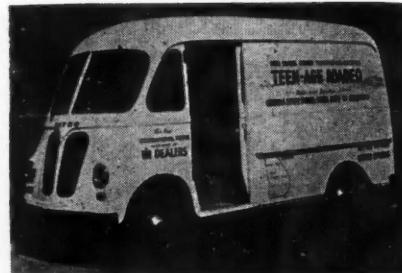
Chassis Details

THE WHEELBASE of all chassis is 134 in. The gvw ratings of Models LM-150, LM-151 and LM-152 are 8000 lb, 9000 lb, and 10,000 lb respectively. Road clearance at the front axle is 9 1/4 in. and at the rear axle is 8 3/8 in. The height from the top of the frame to the ground, loaded, is 23 9/16 in. at the front and 24 7/16 in. at the rear.

The main power plant is the International Silver Diamond 220, 6-cyl, 220.5-cu in. engine rated at 100 max bhp at 3600 rpm.

END

Roadeo for Juniors



International Harvester dealers in Georgia made this LM-120 International truck with Metro body available to the state police patrol to aid in promoting better driving habits among teen-agers. The truck is being used in a teen-age Roadeo promotion in which a champion young driver will be picked from among all schools offering a driver-training course.

END COOLING SYSTEM TROUBLES

*in Cars,
Trucks,
Buses*



New FRAM Radiator & Water Cleaner *Stops Rust... Stops Scale... Removes Particles*

Complete Cooling System Protection

Yes, the new Fram Radiator & Water Cleaner does all three jobs to protect the cooling systems of your vehicles and cut maintenance costs. *Inhibits* rust and corrosion. *Softens* coolant water to stop scale deposits. *Filters* rust, scale and foreign particles from the coolant. And it's harmless to anti-freeze and radiator chemicals!

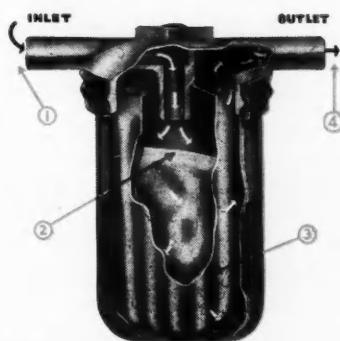
Two models fit all cars, trucks and buses. Installation easy as A, B, C. Low-cost cartridge can be changed easily and quickly. Economical price of unit includes all parts, brackets, fittings. Uses standard heater hose. And, it's backed by Fram's famous money-back guarantee.

This economical installation guards the cooling system to prevent severe overheating that can cause scored pistons and cylinders, burned valves, cracked blocks and heads and other expensive, profit-stealing repairs. Equip your vehicles today—see your jobber or write FRAM CORPORATION, Providence 16, R.I. *In Canada: J. C. Adams Co., Ltd., Toronto, Ont.*

FRAM
OIL • AIR • FUEL • WATER
FILTERS

Here's How the New FRAM Radiator and Water Cleaner Works

(1) A controlled amount of water flows continuously from the cooling system and enters the unit. (2) Water contacts the chemicals for softening and inhibiting. (3) Water passes through filtering media where all solids are removed. (4) Filtered, softened water containing soluble inhibitor re-enters cooling system and circulates throughout. *Result:* cooling water is free of particles, cannot cause scale deposits, rust or corrosion.



Bonus Boosts Buses' Mileage Goal

Continued from Page 57

The substituted new term is "mechanical failure." As defined by management, "There is a mechanical failure when any company bus or other unit of transportation equipment is unable efficiently to complete its assigned work due to faulty mechanical condition; and regardless of where this condition may have occurred or was first observed."

Thus, any away-from-shop operating failure—with the exception of a failure directly chargeable either to "traffic conditions" or a "driver accident"—would be charged against the shop as a mechanical failure. The shop would be so charged, even though the unit might be able to limp back to the garage, or even to operate through additional full runs, but in a risky or wasteful

manner. The new program requires, of course, that this mechanical fault must be corrected before the unit is allowed again to leave the shop.

All Shop Men Get Bonus

TO INSURE the success of the new program, it was considered especially important to gain the full cooperation of all shop workers. For instance, it was assumed that the aid of the 15 greasers and helpers, among the total of 25 shop personnel, would count for a great deal, since they do a large part of all the daily servicing.

For example, under the new maintenance plan they check all bus lights daily. They also are encouraged to be watchful in checking all doors and windows, tightening loose screws and nuts, watching for broken seats, noticing fan belts, etc. Toward the promotion and reward of such interest, the cash-bonus payment which is a part of this property's new maintenance program has been made equally applicable to all shop personnel.

As stated, the mileage between mechanical-failures had been boosted from the 1949 average of about 6000 miles, up to the 7000-mile average achieved during the first six months of 1950. Based on this achievement, plus the fact that this average was maintained throughout July, General Manager Leonard Manual made a special cash-bonus offer for the entire year of 1950. It is applicable equally to all shop maintenance personnel.

He agreed to add to the annual wage of each shop member an additional payment of one-cent-per-hour for each 500 miles (above the base of 6000 miles) added during the year 1950 to the property's mechanical-failure mileage. Since all average about 2500 work-hours each per year, this would mean for each an average addition of \$50 for each added thousand miles. And if the company should achieve the full 10,000-mile-goal for which it is aiming, each shop employee then would receive \$200.

This shop-wide bonus offer, of course, has given special prominence to the question, "What exactly is a mechanical failure, which could be charged against the entire shop personnel?"

Committee Studies Failures

THIS question is being continuously answered through the plan of putting each such "failure" case before a shop committee of six persons shown in Fig. 3. It normally includes the superintendent of maintenance, the assistant superintendent, shop supervisor, a selected shop mechanic, driver supervisor, and outside service manager.

Under this arrangement, the committee must decide whether each particu-

(TURN TO PAGE 158, PLEASE)

FEDERAL BALL BEARINGS —the most complete line of automotive ball bearings anywhere!

Just a telephone call away
... to your local N. A. P. A.
jobber or warehouse.



FEDERAL BALL BEARINGS

THE FEDERAL BEARINGS CO., INC., Poughkeepsie, N. Y.

ONE OF AMERICA'S LEADING BALL BEARING MANUFACTURERS

Quality Since 1908

3 GREAT MOHAWK TRUCK TIRES



SUPER CHIEF TRUCK

An extra tread, heavy-duty truck tire for extremely long mileage. Vented shoulders reduce heat, insure longer wear.

BIG CHIEF TRUCK

Ruggedly designed for grueling special service—excavating, logging and mining operations, either on or off the road.

CHIEF BUS-TRUCK

Outstanding in quality throughout the country for safety, service and economy—the tire for the tough jobs.



"You get more miles on Mohawks!"

Their outstanding quality has been famous among fleet operators everywhere—for over 37 years! Yes, for every truck and bus tire requirement, you can rely on Mohawks for miles and miles of extra service!"

THE MOHAWK RUBBER COMPANY • AKRON 5, OHIO
Export Department — 1819 Broadway, New York 23, N.Y.

Bonus Boosts Mileage

Continued from Page 156

lar road operations failure reported was "preventable" by the shop personnel, or "non-preventable." The non-preventable group of operations failures would include all of those which should be adjudged by the shop committee as being due to highway or driving accidents not chargeable in any way to the mechanical condition of the operating unit.

"Horrible Examples" Displayed

AN ESPECIALLY good use is made of the parts that have failed through the fault of any member of the operation or maintenance department. One such case is illustrated in Fig. 4. This shows a ruined tire on which was attached a card reading, "This tire was ruined by running it flat. Approximate damage \$75." The tire was on display where both shop personnel and drivers could see it.

Another recent "horrible example" was a broken spring. The card attached to it explained that this repre-

sented a "\$65 damage" to a bus. It warned drivers "to avoid bad holes in the roads on their routes."

Another comparatively new shop activity, also in the direction of helping to boost this property's mileage between chargeable mechanical failures, is a company-wide supervisors' meeting which holds a session every Tuesday afternoon. This meeting regularly includes the following persons: General manager, manager of public relations, safety director, supervisor of drivers, night supervisor of drivers, superintendent of maintenance, assistant superintendent of maintenance, night shop foreman, manager of stock room, and purchasing agent. The basic purpose of these meetings is to help to develop improved bus maintenance and operating methods both in the shop and on the highway; and also to help stimulate the idea of efficient team-work between all departments.

Good evidence of the successful development of team-work and a "family spirit," is the near 100 per cent attendance by all company personnel at the general safety meetings. These meetings are planned both for shop workers and bus drivers. They are held in an upstairs meeting and training room, where are shown new films pertinent to safety training and first aid.

Management also makes a specialty of continuously projecting into the homes of all personnel, the spirit of "family-good-will," and family interest in safe and efficient bus operation. This is being, done in part, through printed matter or typed letters, planned to be of interest to the employee and his family. These "family mailings" average five a month.

Closely related to the shop activities is a companion program planned especially for the selection and training of the property's 61 bus drivers. This program also includes a cash-bonus award plan as an incentive to accident-free driving.

This driver selection and training program is being conducted by Elmer R. Schuemann, director of safety, who started with United in 1941 as a bus driver and was promoted to his present position.

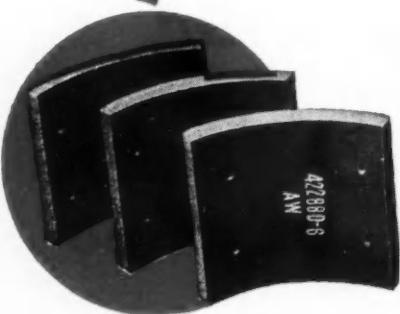
New Shop Forms Developed

THE new emphasis on what is, or might become, a bus mechanical failure brought some basic changes in the shop records, forms and servicing methods. First, a careful study was made of all shop forms then in use. This resulted in the planning and company printing of the two PM form sheets now in use for the three shop bus servicing inspections. These are the "A" inspection at 1500 miles; "B" inspection (TURN TO PAGE 162, PLEASE)



"Just What You'd Expect"

You'd expect Thermod Heavy Duty Brake Blocks to stand up under high operating temperatures—and have uniform friction combined with exceptionally long life—wouldn't you? Certainly—because Thermod is known everywhere for leadership in efficient, economical brake maintenance. Thermod Heavy Duty Brake Blocks are the result of extensive engineering developments and exhaustive field tests. They meet the most rigid state stopping-distance laws. They operate efficiently in wet or slushy conditions. They will not score or wear drums and they provide maximum safe stopping at minimum cost per mile. You expect the best—you get the best—when you specify Thermod.



Thermod

Brake Linings • Fan Belts • Radiator Hose • Hydraulic Brake Parts and Fluid • Car Mats • Clutch Facings • Thermod Precision Process Equipment

Thermod Company • Trenton, N.J.



**says H. E. HILDEBRAND, Vice Pres.
Continental Baking Company**

tires for a given load—with resulting gas economy and less engine wear.

2. Less damage in accidents, because stresses are localized. Body repairs are simpler than cutting and welding steel bodies.
3. Lower paint maintenance costs, due to absence of rust streaks. No road-salt corrosion problems.
4. High insulating value when inside liner is used.
5. Sanitary for food products. Easy to keep clean.

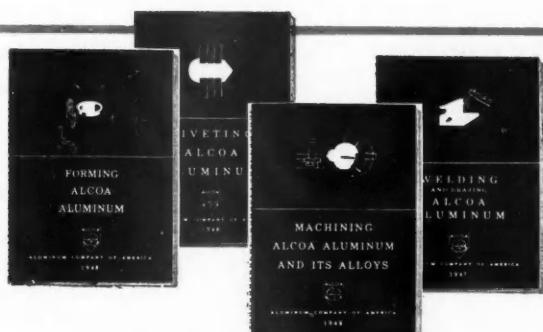
"When our fleet replacement is completed, we will be using close to 4,000 aluminum bodies."



This Continental truck tangled with a telephone pole after sliding on its side. Cab was almost demolished.



Thanks to localized damage and ease of repairing aluminum, wrecked parts were replaced quickly and economically.



FORMING • RIVETING • MACHINING • WELDING

BODY BUILDERS: These helpful ALCOA fabricating manuals belong in your shops!

In addition to Alcoa engineering assistance, you can get any of these technical manuals free through your nearby Alcoa Sales Office. Or write to ALUMINUM COMPANY OF AMERICA, 1860K Gulf Building, Pittsburgh 19, Pennsylvania.

For local source of supply on ALCOA Products, look under ALUMINUM in your Classified Telephone Directory.

ALCOA

FIRST IN ALUMINUM



Bonus Boosts Mileage

Continued from Page 158

tion at 3000 miles; and "C" inspection at 15,000 miles.

One primary change in these sheets is an added side column for condensed inspection "reports." That is, a conveniently arranged side check list of 49 possible "repeat items," which previous shop experience in the maintenance of the buses had proved most likely to come up for needed adjustments, repairs or replacements. It was assumed that reference to this list would afford

a high degree of evidence as to whether any previous weaknesses thus indicated might have become so permanent as to prove the need for parts replacements, instead of only another adjustment or repair.

Catching Impending Failures

THE 49 "reports" items in this side column are distributed in eight different groups covering brakes, engine, clutch, steering, doors, body, and two general classifications. When a new PM form is being marked for a bus scheduled for an A, B or C inspection,

it now is shop practice to review several of the most recent PM inspection sheets in the file for this unit to see if they contain any repeatedly written-in "reports" items. If so, the dates of these previous write-ins are copied on the new report form being prepared to flag the attention of the chief inspector responsible for the new report. This helps him decide that a particular mechanical part, or parts, which apparently has been causing this repeated trouble should be condemned and replaced.

One such example, during the past few months in the United shop, has been the repeated spotting of a certain type of hose connection. The Company now has discontinued use of this particular make of hose. Another recently spotted trouble maker was a transmission shift governor, found to be giving repeated trouble after a certain mileage. This mechanical-failure threat has been wiped out by establishing the new shop practice of replacing all such governors after 15,000 miles. A third example has been repeated trouble from a certain type of fuel lines which now are replaced with an improved type.

Another of the improvements made in this property's new PM forms is shown on Inspection Sheet A-B, Fig. 1, used either at 1500 or 3000 miles. This form lists 50 different PM check items distributed among the following six general groups: "From Operator's Seat (Dash Items), From Operator's Seat (Misc. Items), Inside Coach, Outside of Coach, Under Coach, and Engine Compartment.

The chief change made in this printed form is the use of about one-third of its space, at the extreme right side, for summary of facts relating to each such inspection. These notations may be made under the headings of "Comments" or "Work that should be done." There is also additional space to list "Parts and Units used—number."

These forms will, of course, contribute to the "win the bonus" campaign by the shop personnel. The staff has no doubts about the outcome. The boys already have a record of achievements of which they are justly proud. During 1948 and 1949, for example, United Motor Coach received an award for shop safety. During each of these years only a single lost-time shop accident occurred. Another of the shop's safety achievements is its record of 250,000 consecutive man-hours—from Nov. 30, 1947, to March 1, 1949—with-out a disabling injury to a shop worker.

The bonus incentive gives each man in the shop a worthwhile stake in the outcome of the current campaign. United Motors and its riders also stand to gain:

END

Please resume your reading on P. 58

COMMERCIAL CAR JOURNAL, October, 1950



AIRCO'S new small cylinders

Yours for leasing for 25 years (estimated lifetime) at average cost of \$2.00 per year

Here, at last, is the ideal cylinder team to meet every day welding and cutting operations — a 122 ft. oxygen cylinder teamed with a 60 ft. acetylene cylinder. This combination gives you

THESE 4 BIG ADVANTAGES

1. **Better Gas Ratio** — meets the common demand for 2 to 1 oxygen-acetylene ratio.
2. **Easier Handling** — small, lightweight cylinders easy to move around the shop . . . or on your truck for field welding jobs.
3. **Greater Economy** — your savings on demurrage can amount to \$5.20 or more per year. Airco makes ordinary wear and tear repairs and retests these cylinders at no charge to you.
4. **Always Available** — and when your cylinders are empty, you get a pair of full ones immediately . . . no valuable time lost waiting for cylinders to be filled.

Moreover, if you move your place of business, one of Airco's nation-wide network of dealers and plants will always be near to service your small cylinders.



AIR REDUCTION

Offices in Principal Cities

This Emblem identifies your Airco Dealer

Plus a Nationwide Dealer Organization

Headquarters for Oxygen, Acetylene and Other Gases . . . Calcium Carbide . . . Gas Cutting Machines . . . Gas Welding and Cutting Apparatus, and Supplies . . . Arc Welders, Electrodes, and Accessories



Ask your local authorized Airco Dealer about the 25-year lease plan on these small gas cylinders. Also ask him about his complete line of gas and arc welding equipment and supplies that he can deliver immediately from stock. Do it now! Call him today.



WHEN BUYING YOUR *FIRST TRAILER.....

Kingham Trailers are not a product of assembly line production... They are "Kustombilt", manually, by master carriage craftsmen that understand from long experience the advantage of hand welding the sturdy frame foundation... the necessity of precision fitting every inter-working part... and the personal attention to the minutest finishing touches.

Summed up... you can expect and get, the greatest value for your initial investment and in addition a continual saving due to Kingham's absolute minimum of maintenance expense.

- * Starting your fleet with Kinghams will prove your wisest investment since owner satisfaction is evidenced by repeat orders that account for 90% of our volume.

NATIONAL
SALES

A load behind is a trip ahead

NATIONAL
SERVICE

KINGHAM TRAILER COMPANY, INC., LOUISVILLE, KY.

All-Round Economy Offered in

Kaiser's "Henry J"



Large cargo capacity, fuel economy, low upkeep
makes model attractive for passenger car fleets



The Central READ-RITE Micrometer has a big extra feature you get in no other micrometer . . . *it practically reads itself!* Numbers which automatically appear on the thimble as you adjust the micrometer eliminate the computations usually required in taking a micrometer reading. You read the true, *Certified Accuracy* measurement at a glance. You get faster, easier measuring, and you avoid those costly mistakes that can happen due to errors in taking micrometer readings.

The READ-RITE is available in two polished frame models and six black enameled frame models. Write for Catalog 21 or see your jobber, you'll be surprised at the low cost of these new Central READ-RITE Micrometers.

THE CENTRAL TOOL COMPANY

474 Wellington Avenue
Cranston 10, R. I.

SPECIALISTS IN FINE MICROMETERS
FOR OVER HALF A CENTURY.



KAISER-FRAZER Corp. has released the details of its new entry, the "Henry J" car, in the "low, low-priced" market. As illustrated, it is offered as a two-door model with generous space for passengers and luggage. The Henry J will be available with either a four or six-cyl Kaiser "Supersonic" engine, depending upon the customer's option, both engines being of L-head type. The two-door model has been in production prior to this announcement to allow sampling of dealers without delay.

With a wheelbase of 100 in., the car has an overall length of 174½ in., maximum width of 70 in., and overall height of only 59½ in. Ground clearance is 7¾ in. The tread is 54 in. front and rear. Unusual leg room is provided at the front where it amounts to 42 in. Headroom is 37½ in. front and 35 in. rear. Easy entry and exit is facilitated with 57-in. doors.

Special features include fuel economy expectancy of around 30 mpg, low cost replacement parts, and low upkeep. Another important economy feature is the fact that all fenders are bolted on, thus making replacement a simple matter.

The usual trunk lid has been eliminated. Luggage is loaded from the interior of the car. Where cargo capacity is important, the rear seat is arranged to fold forward to become a part of the trunk floor. This provides luggage capacity of 50.3 cu-ft. With the rear seat in conventional position, luggage capacity is 19 cu ft.

Mechanical Details

IT IS noteworthy that the customer has an option of either a four or six-cylinder L-head engine. Both engines are supplied by Willys-Overland but built to K-F specifications.

Noteworthy feature of these engines is positive crankcase ventilation, air being taken through the air cleaner and exhausted into the intake manifold.

(TURN TO PAGE 166, PLEASE)

Drums last longer with Johns-Manville Brake Blocks...



On the country's toughest runs—where trucks and buses haul the heaviest loads, and brake linings get the most rugged test of their stopping ability and long life—the new J-M Brake Blocks *have more than proved that they can take it!*

There's good reason for this... because J-M Brake Blocks are the result of a new, scientifically balanced formula

that was especially developed by the Johns-Manville Laboratory to give slow, even wear and to prevent costly scoring and checking of drum surfaces... that was designed to give the longest, most economical brake block life with the greatest amount of trouble-free service.

As proved on the Heat Check Analyzer—an exclusive J-M laboratory

device for checking both block life and drum life... and as proved on thousands of runs, and hundreds of thousands of miles of the hardest road usage on all kinds of trucks and buses... J-M Brake Blocks will give you fewer pull-ins, better block and drum life, and better mileage at lower operating cost. Why not test a set of J-M Brake Blocks on your *next* pull-in!

PRODUCERS OF THE FAMOUS 4-STAR FLEET TESTED SETS



Johns-Manville ASBESTOS FRICTION MATERIALS

THE FIRST NAME IN ASBESTOS BRAKE LININGS

PROOF

that GUN IRON* BRAKE DRUMS



CUT COSTS
3 WAYS

** New high-carbon alloy of Gun Iron developed expressly to minimize heat-checking and squeal—give longer wear-life.*

Proven Features

- LONGER WEAR
- MINIMIZED HEAT-CHECKING
- MINIMIZED SQUEAL
- LOWER COST-PER-MILE

TRUCKER REPORTS:

Savings of \$136.62 on brake drum costs per truck for every thousand road-miles; here's how it figures out. This trucker is making daily runs through the mountains with real tonnage. The excessive drag on his brakes frequently cracked through ordinary cast iron brake drums in one day! Hunt-Spiller drums, of the new Gun Iron alloy, last over eight months on the same run. And the above savings do not include savings in service costs or profits lost while the trucks are in the garage.

BUS COMPANY REPORTS:

Ordinary brake drums were lasting an average of 30,000 miles before they had to be replaced. After installing Hunt-Spiller Brake Drums the bus company reports that the original set has gone 97,000 miles currently and is nowhere near the replacement point.

Gun Iron Brake Drums have been noted for long-wearing ever since they were pioneered by Hunt-Spiller over twenty years ago. The above reports are based on the new high carbon Gun Iron alloy perfected in our laboratories expressly for brake drum applications. Our representatives will gladly discuss their features with you upon request. Built to original equipment specifications for most busses and trucks; fully guaranteed.

SEND FOR NEW BULLETIN

HUNT • SPILLER

MANUFACTURING CORPORATION

AUTOMOTIVE DIVISION

399 DORCHESTER AVENUE • SOUTH BOSTON 27, MASS.



Kaiser's "Henry J"

Continued from Page 164

Both engines achieve smoothness with the use of fully counterweighted crankshafts. The Four has four counterweights; the Six, seven counterweights.

Both engines are fitted with the 1 1/4 in. Carter YF downdraft carburetor. Auto-Lite 14 mm spark plugs are used. The clutch is an 8 1/2-in. Borg & Beck. Both AC and Carter fuel pumps have been approved and will be supplied in conventional and booster types as specified. The Carter booster type fuel pump has been released for initial production.

Radiators are of fin and tube type with 9-qt cooling system capacity for the Six, and 10.8-qt capacity on the Four.

The chassis frame is of a box-type construction. The transmission is of conventional three-speed synchromesh type, supplied by Warner Gear. The Warner overdrive is available as optional equipment. The Spicer rear axle is of semi-floating type with standard gear ratio of 4.10 to 1; and 4.55 to 1 with overdrive.

Front suspension is of knee-action type with coil springs and two-way direct acting shock absorbers mounted within the coil spring. A sway bar of torsion type is mounted at the front. The rear suspension consists of a five-leaf semi-elliptic springs with protective covers. Direct-acting shock absorbers at the rear are mounted in sea-legs fashion from the cross member ahead of the rear axle.

Gemmer steering gear of worm and roller tooth type is used. Brakes are four-wheel Bendix hydraulic type with 132 sq in. of lining area. Low pressure, 5.90 x 15 tires are standard.

Condensed Specifications for Henry J Engines

	Four	Six
Type.....	L-head	L-head
No. cyl.....	4	6
Bore (in.).....	3 1/2	3 1/2
Stroke (in.).....	4 1/2	3 1/2
Displacement (cu-in.).....	134.2	161
Compression ratio.....	7 to 1	7 to 1
Bhp (max).....	68 @ 4000 rpm	80 @ 3800 rpm
Torque (max) ft-lb.....	108 @ 1800 rpm	133 @ 1800 rpm
No. main bearings.....	3	4

END

"All Aboard"

The slightly inebriated truck mechanic rushed into the union bus station and plunked down a fistful of bills at the ticket seller's window. "Gimme a ticket to Bond!" he demanded.

The ticket seller raised both eyebrows. "We have no town named Bond," he replied. "You must have," insisted the tipsy truck mechanic. "You know, it's the place where all the whiskey is bottled."

SAVE on TRUCK BODIES

All-Steel "Unit-Built" FRUEHAUFS

NOW AS \$622⁰⁰
LOW AS Taxes Extra

PAINTED, MOUNTED
READY TO DRIVE AWAY



Typical of the outstanding buys at Fruehauf Branches today is this 12-ft. all steel, open rear end, straight-frame body. Complete—mounted on chassis, painted to match cab—ALL FOR ONLY \$622. Taxes extra. (Elevating end gate—illustrated—optional.)

World's Largest Builders of Truck-Trailers
FRUEHAUF TRAILER COMPANY
DETROIT 32 • LOS ANGELES 58
IN CANADA: WESTON, ONTARIO



Save on
**FRUEHAUF
ELEVATING
END-GATES**

\$378⁰⁰*
*Freight, taxes and installation extra

They lift your loads at the
touch of a finger!

FRUEHAUF Service "PAYS OFF"

Accident Prone Shops

Continued from Page 59

be removed at once with solvent or a prepared cleaner. Especially is grease dangerous around a pit, lift or power machinery. Aside from the extreme fire hazard of this sort of thing, an untidy shop also gives rise to untidy work, to premature employee fatigue and to premature wear of parts put together with an accumulation of dirt

and grime from the shop floor or bench.

Uneven floors, cracked concrete, or severe drain slopes give rise to such accidents. A poorly lit shop is another factor contributing to slipping and falling. Dangerous areas should be marked or painted a bright color to aid employees in anticipating them,

floors should be level, drains should be covered and the shop itself kept as tidy as practicality permits as a step in reducing this entirely too high percentage of slipping accidents.

Tire Inflation

COMPRESSED air is dangerous whether it be in a BB gun or a tire casing. When mechanics blow up a tire without regard to safety precautions, they are taking a big chance on losing a finger or even a hand. Locking rings blow off during tire inflation because of a dirty, rusted or damaged rim groove, a burred locking ring, a sprung ring or a ring of incorrect size or type. Before mounting a tire the mechanic should thoroughly examine the locking ring to see that ring and groove match properly, that the edges are sharp, clean and in good condition. There are at least four types of rims on the market today, two of which are similar in appearance. They are not interchangeable, however, and may give rise to such accidents if used in unmatched sets.

Before inflating the tire the mechanic should look to see if the ring is seated all the way around the ring groove. The tire should not be inflated unless the ring is seated fully and parallel to the rim flange all the way around. The tire should be inflated to about 8 lb. pressure and another inspection made. It is best to use an air chuck clip while inflating. The tire should be slipped into an inflating guard or cage when air pressure is applied. The air hose should be extended inside the trim—not around the tire.

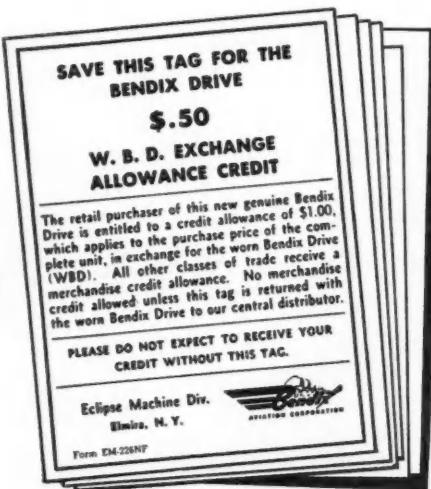
A ring can blow off a vehicle while standing. Tires should be deflated before being removed from the vehicle, especially if the rim or tire shows evidence of weakness. If the tire is especially soft, the mechanic should be cautious, as the locking ring may have become loosened by a rough road. It is not wise to inflate a tire while the vehicle is standing on a slope for the same reason.

Vehicle Accidents

MOST shops are equipped with adequate ventilation systems, but this system will not take care of the exhaust from vehicles. Engines should not be run in the shop without adequate measures taken to get rid of the

(TURN TO PAGE 171, PLEASE)

**SOMETHING
NEW
HAS BEEN ADDED**
→
**AND IT MEANS ADDED
PROFITS ON EVERY**



Bendix Drive

Now a new refund tag goes with every Bendix* Starter Drive. You get a double profit from the finest and most reliable starter drive in the industry: a profit from customer sales, and a profit

from its return to the Bendix Drive Central Distributor. It's a double profit on every sale when you sell Bendix, the nation's No. 1 starter drive.

*REG. U. S. PAT. OFF.

**INSTALL
THIS
DRIVE** →



**RETURN THE
OLD ONE WITH
THIS TAG** →



**THEY'RE WORTH
MONEY!
TO YOU**

ECLIPSE MACHINE DIVISION of
ELMIRA, NEW YORK



Accident Prone Shops

Continued from Page 168

exhaust gases either through available flexible ducting or by raising doors or windows. Most infractions of this rule occur in winter weather and in shops not heated properly.

In this connection it might be mentioned that there are devices now available for detecting carbon monoxide gases in shop areas as well as the truck cab. Where this danger is present, detectors of this type will pay big dividends.

Accidents arising with the vehicles themselves fall into the following categories: starting engines with mechanics' hands in mechanisms, starting vehicles with mechanics under wheels, driving across sidewalk without checking for pedestrians, and spotting trucks without regard for mechanics working in various areas. All can be averted by a little more thoughtfulness.

Shop Fires

FIREs account for the destruction of some 276,000 buildings in U.S. each year—exclusive of homes, factories and institutions. Yearly fire losses amount to over \$400,000,000. Fleet shops, terminals, warehouses make up a sizable portion of this total. And many of these are a result of carelessness, poor inspections, poor housekeeping or lack of adequate fire fighting equipment. Losses are increased when employees do not know how to handle fire fighting equipment effectively—or when an adequate system of fire fighting has not been planned.

Probably the first requisite of a good fire fighting program is a careful study of the common origin of shop fires. Shop fires originate through:

1. Defective electrical wiring.
2. With stored flammable liquids (gasoline, oil, solvents)
3. From discarded cigaret butts
4. From overheated machinery
5. Through overfired heaters
6. From electrical shorts in vehicles
7. From backfiring or flooding of vehicles
8. In inflammable cargoes of vehicles
9. From careless use of welding equipment
10. With blowtorches, soldering irons, improvised heaters
11. From greasy rags stored improperly
12. From filling vehicles with gasoline
13. From careless use of cleaning materials

Electrical Wiring

THE origin of the fire suggests preventive steps in attacking causes. Far too many shops are careless in checking electrical circuits. When new machinery is installed, extra lights are put in or equipment moved, wires are sometimes left bare or are taped hastily. Sometimes additional load is put on circuits without checking to see if wiring is heavy enough to handle it. When outlets are too few in number, several power tools

are connected to one receptacle. Electrical units are allowed to become oil-soaked, while wires become frayed at the male plug.

Unwary personnel may be tempted to replace fuses with those of higher capacity when circuits fail due to overloading. Fuses protect against overloading, and must be replaced with the size recommended by electrical engineers. Untrained personnel should not be trusted with replacement of such units, nor should they

(TURN TO PAGE 172, PLEASE)



The NEW

BUFFALO better-built

CARBON DIOXIDE FIRE EXTINGUISHERS with SQUEEZE GRIP VALUE

Every motor vehicle, every garage, repair shop and spray booth needs this instant, effective protection.

Liberates a clean, dry, odorless, inert gas under high pressure without pumping. Snuffs out flames in seconds.

Especially effective on highly flammable liquids . . . gasoline, oils and greases, alcohol, solvents, paint, lacquer, etc.

Safe and certain fighting fires of electric origin . . . a non-conductor of electricity.

Approved by Underwriters Laboratories.

● *Buy from your local Buffalo dealer. If unable to secure, please write us for name of nearest distributor.*

Established 1895

BUFFALO FIRE APPLIANCE
CORPORATION
DAYTON 1, OHIO

Accident Prone Shops

Continued from Page 171

be allowed to make even temporary repairs.

Wiring must be protected against contact with moving machinery, water and moisture from leaking roofs or pipes or the possibility of damage from shop tools and equipment. While cable looms and sheafs are designed to provide this protection, cable cannot be expected to withstand abnormal abusage.

Cables of electrical units must be kept in good repair, should be hung up when not in use and should not be used without adequate connections. Grease will eventually deteriorate rubber insulation, so it must be kept clean and inspected frequently. Drop cords should receive periodic inspections not only because of the possibility of shorts and fires, but because other accidents may occur when employees are shocked, drop equipment, knock jacks or props out from under work, etc.

Fires are especially prominent around electric motors due to the normal accumulation of oil and grease around such equipment. Fires result from frayed wiring, defective relays, shorted boxes, wet wiring, overworked or shorted motors and from loose or slipping belts. It is wise to keep such equipment free of accumulation, inspect it frequently and keep it under observation while running to preclude the possibility of such fires.

Smoking

LITTLE needs to be said here with regard to the danger of smoking in any shop. While some permit smoking except in certain areas, the mechanic must use good judgment in use of fire. He will not smoke around open gasoline, while cleaning equipment with solvents, near oil storage tanks, while refueling or when working on the fuel system of the vehicle. While shop rules govern this practice, it is wise to refrain from smoking when working on the battery, when working over the engine, near cargoes which are flammable, in the paint shop, or engine testing department.

The problem resolves itself into one of training personnel to be fire conscious—to think of putting a cigaret out properly—to refrain from taking chances—to observe smoking rules and to be on the lookout for fires that have started.

Gasoline Storage

PROBABLY the greatest fire hazard is in gasoline storage. Many shops confine dispensing of gasoline to areas outside the shop for this reason. When vehicles are refueled inside, care should be taken that the area is well ventilated, that tanks are not overfilled, that sparks from machinery or smokers are not present. Floors should be wiped dry of any spillage or should be washed with a hose. Adequate fire fighting equipment should be close at hand.

When it is necessary to store gasoline in containers inside the shop, the can should be capped, should be painted red and clearly marked. Personnel should be taught not to use gasoline for washing parts. While solvents and kerosene have much lower flash points, they should be handled carefully. When cleaning rags become grease soaked, it is best

(TURN TO PAGE 174, PLEASE)

THE BIEDERMAN TRUCK



**An All-Star Truck
Constructed of All-Star Units
Doing an All-Star Job Since 1920**

DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself.

Only the most sturdily constructed units of America's leading manufacturers are built into it.

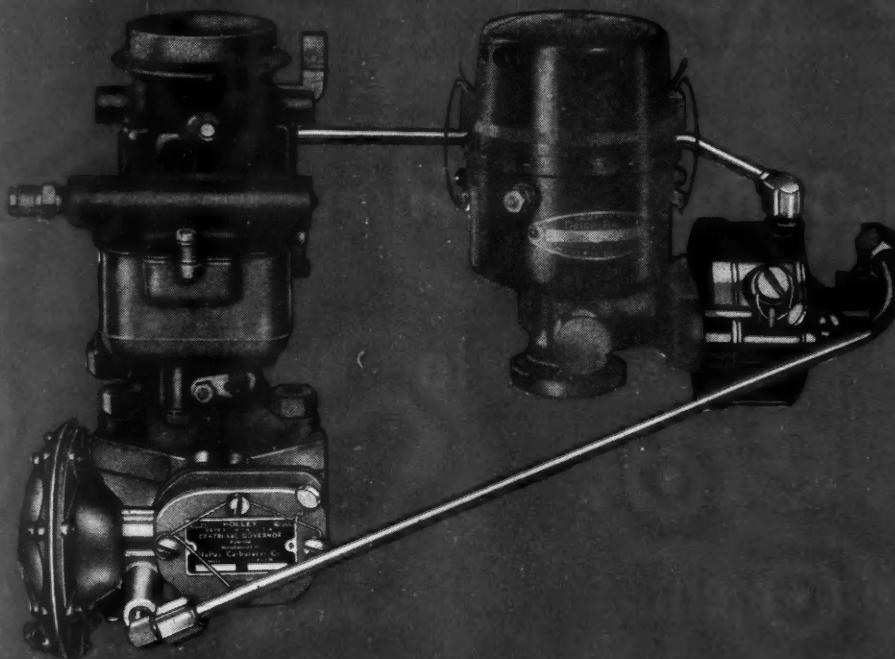
Biederman Trucks win by performance. Inquiries regarding dealership solicited.

WRITE, WIRE or PHONE

**BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO**

HOLLEY *Centrivac* GOVERNORS

COMBINED WITH DELCO-REMY DISTRIBUTORS



The Most Advanced Type of Economical Governor Control

IMPROVED SPEED REGULATION: The new Holley Centrivac Governor is operated by a vacuum powered diaphragm which is controlled by a centrifugal air valve mounted on side of distributor. This insures more even flow of power—a higher economy factor—improved engine performance.

FASTER ACCELERATION—NO SURGING: The Holley Governor design permits the engine to accelerate normally, since the governor throttle remains wide open up to the desired speed control. This feature eliminates engine surging with definite

improvement of truck operation—less wear and tear on drivers' nerves.

REDUCES POWER LOSS: The Holley Governor cannot choke the engine when pulling heavy loads up hills because the throttle remains wide open until the speed control point is reached. This reduces power loss, improves operating efficiency.

ECONOMICALLY INSTALLED: Due to its new and revolutionary design, the Holley Centrivac Sandwich Governor can be installed on most popular truck engines without need for special drive, linkage, or adapter accessories. Only one piece of metal tubing is used, connecting governor control valve with the governor mechanism.

NOW CHOICE OF THE LEADERS

STANDARD EQUIPMENT ON

AUTOCAR • CHECKER BUS • FORD TRUCKS • GENERAL AMERICAN
AEROCOACH • GENERAL MOTORS TRUCK AND COACH
FLEXIBLE BUS • INTERNATIONAL HARVESTER • MOTOR
COACH INDUSTRIES • REO MOTORS, INC. • TWIN COACH
UNITED STATES ARMY • WHITE MOTOR CO.

ALSO AVAILABLE FOR
ALL OTHER POPULAR MAKES OF TRUCKS

AUTOMOTIVE EQUIPMENT AND ACCESSORIES

HOLLEY
Carburetor Co.

5930 VANCOUVER AVE.

DETROIT 8, MICHIGAN

Accident Prone Shops

Continued from Page 172

to have them cleaned at once. When this is impossible, they should be stored in a well-ventilated, fire-proof container to preclude the possibility of spontaneous combustion. Oily rags left in the seat of a truck may ignite readily from a cigarette or sparks from faulty wiring.

Originating With Vehicle

THE vehicle itself is a frequent source of shop fires. Backfiring or hot carbon blown from the exhaust may start a fire if inflammable liquids or vapors are present. A loose battery may start a fire when a short develops. Stepping on the top of the battery with hobnail shoes, laying tools on the top or leaving cables loose may contribute to short circuits across the terminals and result in electrical fires. When a truck is

stored in the shop overnight or when cargo is left in during service, it is the responsibility of the shop personnel to see that inflammable cargoes are treated with due respect. Vehicles with flammable cargoes should have adequate fire fighting equipment located nearby.

Shop Equipment

CERTAIN shop equipment produces special fire hazards when used improperly. Among these is the acetylene and electric welder. Probably the greatest danger lies in careless handling of the torch, when work is overheated or the flame is inadvertently turned toward a flammable object. Gas tanks should not be welded while mounted on the truck. They must be removed, washed out with water and filled with carbon tetrachloride before welding is attempted.

Blow torches and soldering irons are dangerous only when improperly handled. However, such tools have been the cause of many shop fires simply because personnel failed to observe common-sense safety precautions.

The paint shop is a special fire hazard and should have adequate fire protection. Engines should not be operated and smoking should not be allowed while spray painting is in progress. There are always inflammable liquids stored around this area, and the air itself is apt to be filled with volatile inflammable mist. It is extremely necessary that the paint shop be ventilated properly to keep danger from fire to a minimum.

Cleaning of equipment and parts need not be a special fire hazard, but it assumes this category in many organizations because personnel use highly inflammable liquids for cleaning.

END

Please resume your reading on P. 60

3M Awarded Gov't Contract

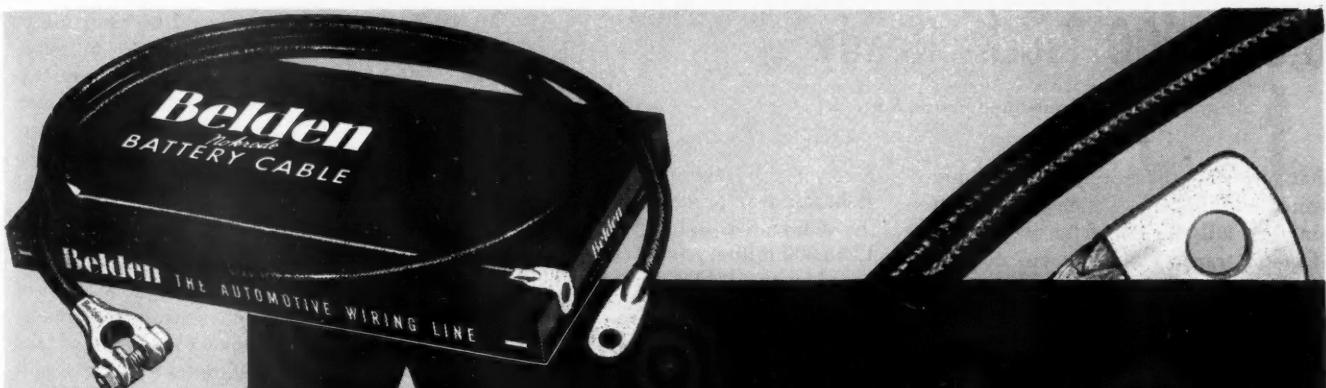
The Minnesota Mining & Mfg. Co. as agents for the federal rubber reserve agency, and Pacific Rubber Co., as associates, have been awarded the contract to re-activate and operate a \$22,000,000 government-owned synthetic rubber plant at Torrence, Cal. The plant, which was operated during World War II by Goodyear Tire & Rubber Co. and the U. S. Rubber Co., has an annual capacity of more than 60,000 tons of butadiene rubber. It is one of the larger plants of its kind in the nation, and will employ 700 to 750 persons.

**Here's the
W. G. B.
Replacement
CARTRIDGE
That Can
Improve
Your OIL
FILTRATION
— Regardless
of What Make Oil
Filter You May Use!**



Write today for details about the W. G. B. Fleet Filtration Plan

**W.G.B. OIL CLARIFIER, INC.
KINGSTON, N. Y.**



Always use the Right Cable

Be sure of a Profit

Cut out the Comebacks

You can Always use the Right Battery Cable when you stock the Belden condensed line. A few numbers handle most car requirements—mean fast turn over.

Belden Battery Cables—engineered Nokrode terminals—full-size cable—and sure-contact lugs—make them easy to install. They co-operate with the voltage regulator—they mean confident starting in all weather—they give long service without complaints.

Be sure of the right cable—specify Belden.

Belden Manufacturing Company
4695 W. Van Buren Street
Chicago 44, Illinois

Sell **Belden**
Automotive **WIRE**

BATTERY CABLES • SPARK PLUG WIRES • LIGHTING WIRES

8,000,000 Trucks Ready

Continued from Page 51

that our story has been properly presented and that those in charge of planning are fully aware of the importance of motor transport in national defense.

At the same time, American industry's capacity to produce war material is well above the highest production levels that were reached during World War II. Truck manufacturers are now turning out more than a million trucks

per year for the civilian market. If full-scale war production were ordered, the automotive industry could produce 1,268,000 military trucks per year, compared with 621,000 produced in the peak war year of 1944.

Civilian Manpower Reserve Big
THE next most important problem, I believe, is that of manpower to

keep our equipment rolling and to enable the trucking industry to serve America's war effort efficiently and expeditiously. Some of our young men are now being called to active service, and more will be called in the months ahead. Meanwhile, as the Government increases its orders for war material, additional drains on the existing supply of manpower will make it more and more difficult to maintain a staff of well-trained, seasoned experts. Present indications are that expansion of the armed forces and defense plants will require an additional 2,200,000 persons.

On the other side of this picture, however, there are available today more than three million unemployed persons who are seeking work. In addition, the Government believes that 2,500,000 women, teen-agers and handicapped persons will enter the labor market because of increased activities in the war production field. The combined total, after deducting 2,200,000 for the armed forces and war industries, gives the nation a reserve of nearly three and a half million workers who could be called upon to fill the places in all industries, including our own, that are left by reservists, National Guardsmen or draftees called to active duty.

Although I have placed the tire supply problem in third place in order of importance behind replacement vehicles and manpower, there is every indication it would be our number one headache in the event of a full-scale war effort. This country's synthetic rubber production is being stepped up and should reach 500,000 long tons per year by next January 1, but large-size tires still are made almost entirely from natural rubber. Since 96 per cent of the world demand for natural crude rubber is supplied by countries in southeast Asia, any disruption of either the output or the transportation from this source would impose a serious handicap on truck transportation.

(See "Tire Supply Adequate but Controls are Coming," CCJ, Sept., 1950, Page 74.—Ed.)

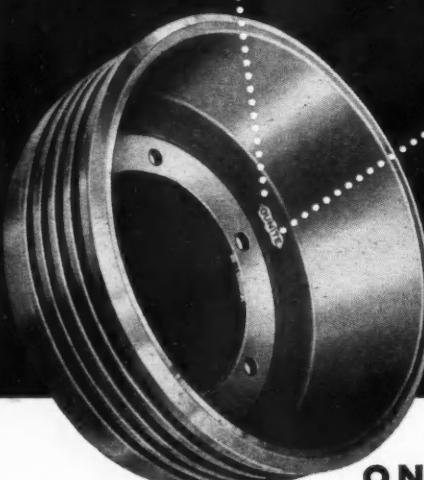
Trucks Vital to War Economy

WORLD WARS I and II showed clearly that an efficient truck transportation system is an indispensable part of this country's wartime economy and one of the major reasons for American superiority in the fields of production and distribution. And in these two fields can be found the basis for America's great strength in time of war. In the last war, our production and supply miracles spelled the difference between victory and defeat. When we went to war with the Axis,

(TURN TO PAGE 178, PLEASE)

LOOK FOR

GUNITE



...Cast Onto the
BRAKE DRUM

ONLY A GENUINE
GUNITE BRAKE DRUM
BRINGS YOU
LOWEST COST PER MILE

Longer life and improved performance of GUNITE Brake Drums are due to the design and the GUNITE material of which they are made. GUNITE is specially alloyed, carefully processed metal with exceptionally strong, tough, rugged physical properties. GUNITE outperforms and outlasts other materials and brings your brake costs per mile to a minimum. Be sure you get genuine GUNITES when you order them. Some other brake drums are designed and painted to look like GUNITES. Genuine GUNITES have the GUNITE name cast onto the drum... look for it and be sure.

GUNITE FOUNDRIES

CORPORATION
ROCKFORD • ILLINOIS

GUNITE BRAKE DRUMS FOR TRUCKS, TRAILERS AND BUSES

Designed to Perform a Needed Service

and to deliver a Positive
Savings in Fuel!

These **ELEVEN**
"Built to Last"
Features are in every
KYSOR SHUTTER

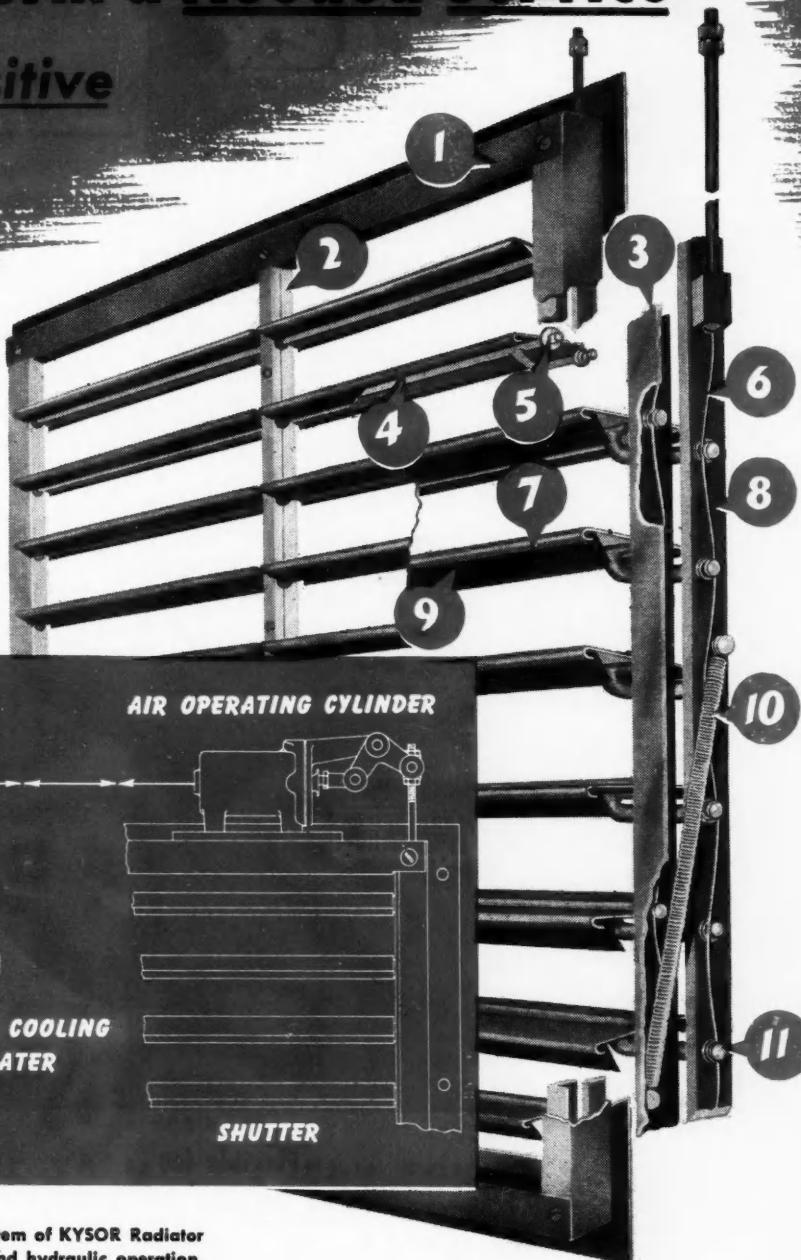
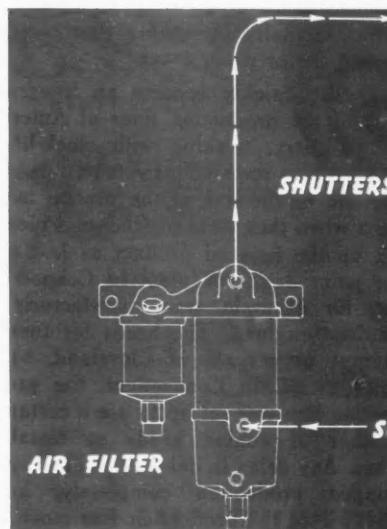


Diagram shows complete control system of KYSOR Radiator Shutter, available for air, vacuum, and hydraulic operation.

- 1 FRAME is made of sturdy $\frac{1}{16}$ " sheet steel to provide rigid mounting to radiator.
- 2 CENTER BAR is used when vane length exceeds 26 inches. This sturdy bar keeps vanes in larger shutters in exact alignment at all times.
- 3 VANE SUPPORTING MEMBER is bolted to main frame and is easily removed for repair in case of damage.
- 4 VANE ROD of heavy steel runs the entire length of vane.
- 5 VANE ROD WASHERS are used to insure minimum friction drag between vanes and bearing angle.
- 6 ANTI-CHATTER WIRE reduces wear from vibration—greatly lengthening life of shutter.
- 7 VANES are precision made of $\frac{1}{16}$ " sheet metal. Provide a stable wall to stop air when shutter is closed.
- 8 CONTROL BAR is so designed as to close vanes in accurate alignment and compress rubber seal (9) for extreme tight closure.
- 9 SEAL is corrugated butane rubber, crimped into under side of vanes along leading edge.
- 10 RETURN SPRING opens shutter, providing safety factor in case of power failure.
- 11 POROUS BRONZE oil-retaining bushings used at all bearing points.



KYSOR SHUTTERS are easy to install—or specify them from your truck manufacturer. Write for bulletin or specific information as applied to your fleet!

"Built to Last"

KYSOR HEATER COMPANY Cadillac, Michigan

CANADIAN REPRESENTATIVES... RAILWAY & POWER ENGINEERING CORP.

NEW GLASGOW • MONTREAL • NORANDA • NORTH BAY • TORONTO • HAMILTON • WINDSOR • WINNIPEG • EDMONTON • VANCOUVER

Titeflex

ALL-METAL FUEL LINES

for TRUCKS



for CARS



for BUSES



Flexible for EASY INSTALLATION LONG SERVICE

The flexibility of Titeflex automotive lines makes them easier and more economical to install. It also makes them withstand vibration for longer periods of time than rigid lines. In addition, Titeflex lines are All-Metal. They require no maintenance . . . and they pay for themselves in longer service.

Sizes for all cars, buses, trucks

TITEFLEX, INC.
500 Frelinghuysen Ave., Newark 5, N. J.

Titeflex
ALL-METAL AUTOMOTIVE TUBING

Write for
TITEFLEX AUTOMOTIVE CATALOG

8,000,000 Trucks

Continued from Page 176

we had a small army and a one-ocean navy. Our troops began their training with broomsticks for rifles and cardboard signs on trucks to represent tanks. We might laugh about it now, but it wasn't very funny then. We were caught short—short of just about everything but transportation.

Our most potent weapons then were not secret weapons; they were mass production and the greatest transportation system the world has ever known. At that time, with a total fleet of some 4,850,000 vehicles, the trucking industry was hauling about one-fourth as many ton-miles of freight as the railroads. But the value of truck transportation goes far beyond the mere volume of freight moved, because in addition to the service trucks perform independently of other types of transportation, they also transport either from the point of origin or to the point of destination virtually everything that moves by rail, air or water.

Trucks quickly became an integral part of the production lines of American industry, working with clock-like precision to drop off raw materials at one end of the line at the precise moment when they were needed, and picking up the finished product as fast as the paint dried. A plant in Connecticut, for example, was manufacturing airplane engines. The heads for these engines were made in Cleveland, 613 miles away. In Connecticut, the production line was set up to use a certain number of engine heads at certain times. Any delay in delivery would have stopped production completely, but trucks kept the production line moving steadily. A motor carrier picked up the engine heads at the Cleveland plant while they were still hot. It was even necessary for the men to use heavy leather-and-asbestos gloves to handle them, and the truck floors were covered with steel to prevent their catching fire. The schedule from the Cleveland plant to the Connecticut plant for the 613-mile run was 22 hours. The railroad time was five days.

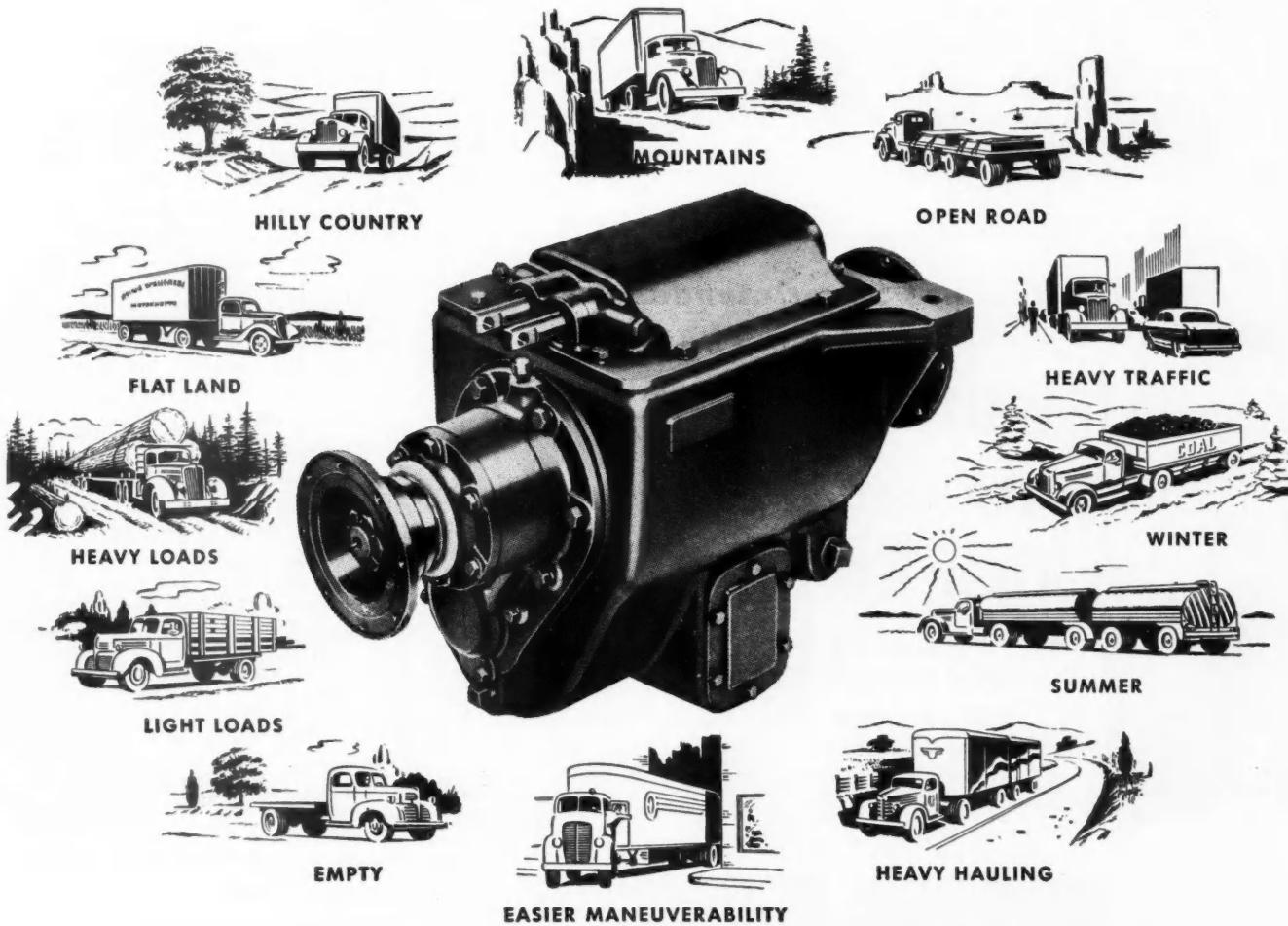
Because of their ability to hit the road on a moment's notice, trucks were called upon in countless emergencies. To mention only one, they handled a load of life rafts from the East Coast to a port on the Pacific Coast in record time in order to meet the sailing schedule of a ship destined for the fighting zone in the Far West.

There were thousands of other instances like these, both on a routine daily basis and on an emergency basis.

(TURN TO PAGE 180, PLEASE)

COMMERCIAL CAR JOURNAL, October, 1950

Spicer BROWN-LIPE auxiliary transmissions assure lowest cost per ton mile at all times under all driving conditions



... AND THERE'S A SIZE TO MEET EVERY TRUCK NEED

Here are the Spicer BROWN-LIPE advantages to you:

MORE POWER. With a Spicer Brown-Lipe 3-speed Auxiliary, you get *more pulling power* in underdrive gears. You will average more horsepower after each shift. Your truck can easily handle heavier loads—that means more profitable payloads.

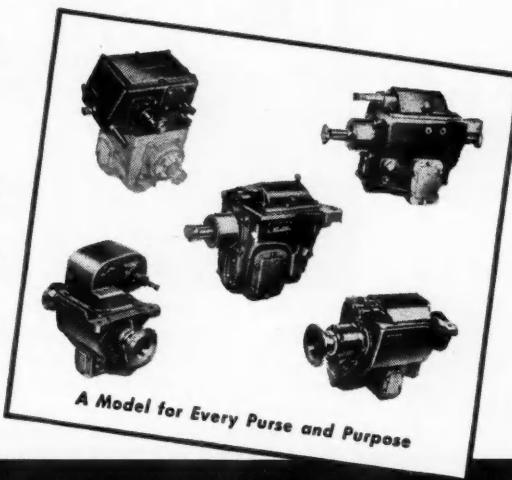
EASIER MANEUVERABILITY. Good driver control in tight spots.

FASTER TRIPS. Overdrive gears *increase* truck speed while *reducing* engine revolutions. Less fuel, more miles per truck hour, with lower fixed charges per trip. Lower driver cost per trip. Less overtime.

REDUCE COSTS. Every unit—motor, clutch, transmission, drive shaft, axle, brakes, tires—operates with less strain. Destructive luggering and overspeeding of engines practically eliminated.

PROFITS GEARED UP. Less down time; fewer repairs; reduced gas, oil and tire bills; more consistent and bigger payload income—all these are assured by a Spicer Brown-Lipe 3-speed Auxiliary Transmission.

Let Spicer Engineers help reduce your cost per ton mile.



46 YEARS OF
Spicer

TRANSMISSIONS SERVICE

TORQUE CONVERTERS

SPICER MANUFACTURING • Division of Dana Corporation
TOLEDO 1, OHIO

PASSENGER CAR AXLES • CLUTCHES • PARISH FRAMES • STAMPINGS • FORGINGS
UNIVERSAL JOINTS • SPICER "BROWN-LIPE" GEAR BOXES • RAILWAY GENERATOR DRIVES

8,000,000 Trucks

Continued from Page 178

The total represented a highly important part of the successful war effort.

Trucks a Match for New Weapons

IN ANY full-scale war of the future, however, the home-front transportation problems will be complicated tremendously by the new weapons available to our enemies—atomic bombs,

long-range bombers to carry them, guided missiles, and others. These developments make it virtually certain that our home soil would be affected directly by the ravages of war for the first time since the war between the states.

As a result, far greater reliance upon highway transportation would become necessary than has been the case in any war up to now. Great Britain, France, Germany and other European countries experienced grave transportation difficulties during the war when their rail facilities were bombed out,

but the truck transportation was able to take up at least part of the load while emergency repairs were rushed to completion.

We must bear in mind, however, that atomic radiation probably would prevent the use of wide areas, barring repairs to bombed-out rail terminals or other transportation facilities. Because of their ability to go wherever a road exists, trucks would be called upon in such cases to by-pass these areas and keep a steady flow of material moving to our troops, to the civilian population, and to industrial plants.

Civil defense planning throughout the country also is taking into consideration the value of motor trucks as a quick means of moving out the civilian population from stricken areas and of bringing in relief supplies.

Today, our truck fleet totals approximately, 8,000,000 vehicles. At the end of World War II, a high percentage of our rolling stock was old and nearly worn-out from the hard use it was given during the war years. Many of the pre-war trucks have been replaced, however, so that the fleet now is in top-flight condition to meet any demands upon it. What we accomplished between 1942 and 1946, we can do again—and better. With far more experience and with more and better equipment, we are ready to beat the records of transportation that we established then.

END

Please resume your reading on P. 52

Federal Aid Held Down

Congress has acceded to President Truman's demand that Federal-aid highway funds be held to \$500 million annually and has authorized this amount for the fiscal years 1952 and 1953. This is a \$50 million annual increase over present law. The annual breakdown is as follows: \$225 million for Federal-aid primary roads, \$150 million for secondary roads and \$125 million for the Federal-aid urban system. The advocates of Federal funds for rural roads settled for a compromise in the law which directs the spending of secondary road funds on roads that will attract rural voters. There are also several miscellaneous provisions not covered in the present law. These are: \$10 million for defense projects; \$5 million for highway improvement in the public domain; \$4 million for the Inter-American Highway; \$3.5 million for roads in Alaska's Tongass forest; and \$5 million for an emergency highway disaster relief fund. Other miscellaneous authorizations include \$37.5 million for forest highways, roads and trails; \$23 million for national parkways, roads and trails; and \$6 million for roads in Indian reservations. The new law merely authorizes such expenditures, Congress will still have to appropriate the money.

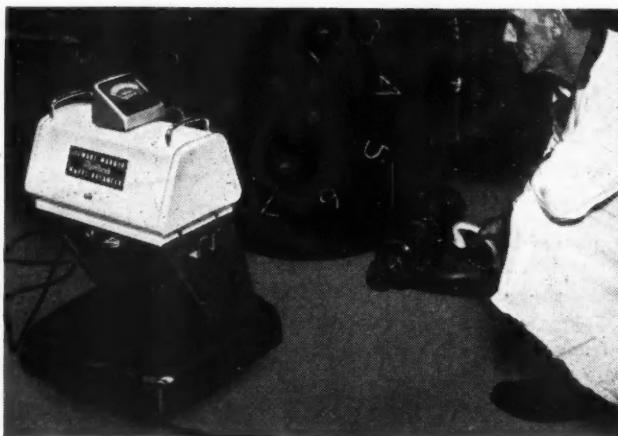
Maintenance Superintendent S-T-R-E-T-C-H-E-S Tire Mileage with... **Stewart-Warner's New Electronic Wheel Balancer!**



Here's what Mr. GUSTAV HEIBER, V. P. and Superintendent of Maintenance, B. & W. Bus Lines*, says—

"Our big story is front-end tire mileage—we've increased it by 30% since 1947! That's the year we got our first Stewart-Warner Electronic Wheel Balancer, and it's been a big help every day in building up this service record."

*Framingham, Massachusetts



Shown at right is the new Electronic Stewart-Warner Wheel Balancer in action on the right front of one of B. & W.'s 76 modern bus units.

IN MINUTES, this new Electronic Wheel Balancer checks single or dual, front or rear wheels—in true, running position! You avoid costly repairs, replacements and "downtime" in advance! And you increase driving comfort and safety.

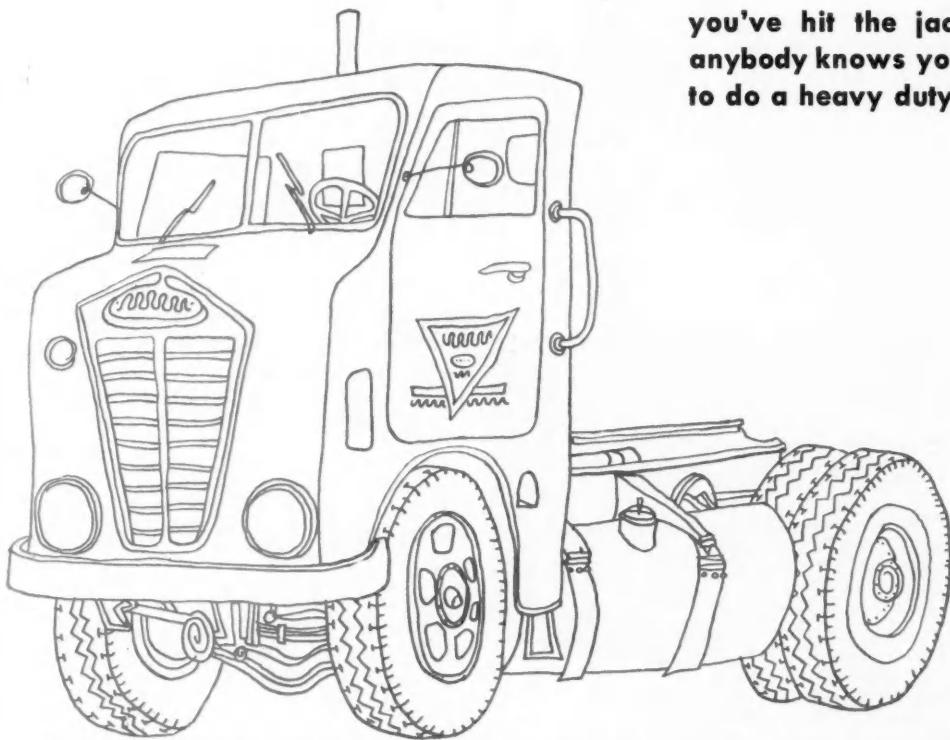
Vibrations and pounding on front-end assemblies, tie rods and bushings are eliminated—without removing the wheels from the vehicle. Degree of unbalance is quickly, accurately registered up to 2/1000 of an inch by this easy, Electronic method.

Write today for complete free information on this easy-to-use unit, produced by Stewart-Warner only. Address Dept. D-100 for rapid reply.

Stewart-Warner Corporation

Dept. D-100, 1826 Diversey Parkway, Chicago 14, Illinois

IF A JOCKEY DRIVES YOUR TRACTOR



you've hit the jackpot in saving weight. But anybody knows you don't send in a lightweight to do a heavy duty job.

That's true of truck frames, too. When you are thinking about light weight in frames, remember that Parish Steel heat treated side rails give you the extra safety you need in the long run . . . at no sacrifice of payload. The reason is that heat treated steel has the high strength that permits us to design side rails in thin sections. We do not have to work with heavy gauge stock to get the strength and fatigue resistance you need in a heavy duty frame.

For example, here are the guaranteed minimum physical properties in Parish Steel heat treated side rails:

Tensile Strength—100,000 p.s.i.

Elongation in 2"—18%

Elastic Limit—80,000 p.s.i.

Compare these figures with any others you may have seen. You'll soon agree that for long frame life and keeping away from maintenance troubles, it pays to talk to your truck manufacturer about Parish Steel side rails.

To give your men in the shop the "know-how" for easy welding of heat treated steel frames, ask for the Parish Welding Bulletin. It gives useful information on kinds of weld wire to use, positioning of the work, etc. Write for your copy. No obligation.

Check these questions when you think about heavy duty frames . . .

Do the rails give me an extra margin of safety against fatigue?

How many pounds will each finished rail weigh?

Can welding, riveting, drilling, etc. be done easily?



PARISH PRESSED STEEL COMPANY
subsidiary of Dana Corporation READING, PA.

Western Representative: F. SOMERS PETERSON COMPANY
524 Folsom Street, San Francisco
413 East 12th Street, Los Angeles

ONLY **PARISH**
STEEL
HEAT TREATED SIDE RAILS GIVE YOU EXTRA SAFETY IN THE LONG RUN!

CCJ News Reports

Continued from Page 27

quarter gain has been made over the second quarter of the preceding year. However, the total volume transported in the second quarter of 1949 increased only 3.4 per cent over the second quarter of 1948.

The record second quarter tonnage volume followed the establishment of an all-time high for the first quarter this year, when the statistics showed a 19.1 per cent volume increase over the first quarter of 1949.

Monthly freight statistics show that the

1950 Domestic Motor Truck Factory Sales by G.V.W.*

	5,000 lb. and less	5,001- 10,000	10,001- 14,000	14,001- 18,000	18,001- 19,500	19,501- 26,000	Over 26,000	Total
January	39,252	19,251	6,804	13,093	2,680	1,616	1,482	84,378
February	39,629	17,151	6,032	11,739	2,720	2,157	1,511	80,939
March	47,828	20,921	7,200	14,644	3,680	3,474	2,062	99,809
April	46,375	19,025	5,884	12,971	3,391	3,222	2,326	93,294
May	52,805	21,935	7,468	16,721	4,077	3,598	2,393	106,997
June	58,892	24,249	8,158	18,488	4,104	3,507	2,838	120,236
July	47,590	20,991	6,550	13,489	3,780	3,489	2,684	98,573
Total—7 Mos. 1950	332,371	143,523	48,096	101,145	24,432	21,363	15,296	886,226
Total—7 Mos. 1949	263,680	172,251	48,561	99,302	17,325	11,946	8,609	621,674

* Automobile Manufacturers Association.

volume of freight transported by motor carriers in July, 1950, decreased 3.2 per cent below June, 1950, but increased 34.2 over July, 1949.

Get More Trips per Truck-Day with "On the Job" Design



Boost the daily payload of your trucks by taking advantage of the special features built into Marion Bodies and Hoists. Under actual work conditions, Marion engineers design each unit to fit the particular needs of every hauling job. This assures peak performance and rugged, dependable stamina for your individual truck requirements. Write for complete catalog today.

Model Illustrated:
Marion 12 cu. yd. semi-trailer dump bodies for hauling crushed stone and gravel. Mounted over Marion twin telescopic 7" hoist.



GET MORE DETAILS NOW
Just mail a post card or letter for the complete Marion catalog, or ask your Marion Distributor.

MARION
BODIES AND HOISTS

MARION METAL PRODUCTS CO., MARION, OHIO

SAE Transport Meeting

General review of progressive and highly effective methods of operating and maintaining commercial motor vehicles will be featured on the program of the SAE National Transportation Meeting scheduled for Oct. 16 through 18 in the Hotel Statler, New York City. Interest will be directed also to modern methods of curbing traffic noises and to the relationship between effective maintenance and prevention of accidents.

Tentative program lists General Brehon B. Somervell, president, Koppers Co., Inc., as guest speaker at the meeting dinner Thursday evening, Oct. 17. General Somervell will speak on "Power on Wheels for Peace or Victory."

The meeting is sponsored by the SAE Transportation and Maintenance and Truck and Bus Activities, with the cooperation of SAE Metropolitan Section. T. L. Preble, of Tide Water Associated Oil Co., is general chairman.

The program will incorporate several reports on extensive investigation of subjects related to commercial motor transport, including results of a study by H. S. Fairbank, of the U. S. Bureau of Public Roads, on the effect

(TURN TO PAGE 184, PLEASE)

1950 Truck Trailer Shipments*

	June	Six Months
Vans		
Insulated and refrigerated	381	1,716
All other closed top	2,529	11,983
Open-top	393	1,781
Total—Vans	3,313	15,460
Platforms		
With cattle and stake racks	139	639
With grain bodies	67	272
All other	821	3,683
Total—Platforms	1,027	4,594
Tanks		
Petroleum	254	...
All other	36	...
Total—Tanks	290	1,645
Pole and logging		
Single axle	149	571
Tandem axle	107	430
Total	256	1,001
Low-bed heavy haulers	186	830
Dump trailers	86	348
All other trailers	281	1,315
Total—Trailers	5,419	25,194
Trailer chassis	195	1,076
Total—Trailers and chassis	5,614	26,270

* Industry Division, Bureau of the Census.

NOW! Inland Self-Sealing Weather Strip *offers increased visibility!*

HERE'S WHY IT'S LEAKPROOF

All Inland corner sections are free of mitered joints or seams. Locked with the Inland Filler Strip, they can't leak. Great tear-or-break strength. A 5-degree plus-or-minus variation in application permits freedom in design and installation, without impairing the effectiveness or permanence of the seal. It's *complete* weatherproofing.



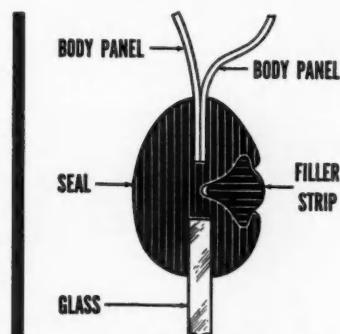
Every vehicle operator knows that in windows and windshields maximum visibility is a *must*!

Now, Inland Self-Sealing Weather Strip with its new Molded Division Strip, leakproofs glass corners and permits increased visibility by eliminating rounded corners for any permanent window. Inland Strip fits various sized corners *without* mitered joints, thus eliminating mitering operations and cementing. The new

Inland Self-Sealing molded assembly provides its own narrow division strip for all permanent windows.

For your vehicles . . . specify Inland Self-Sealing Weather Strip. You'll have *no leaks!* And when glass breaks, as it will, replacing it will be a simple one-man operation . . . quicker, cheaper, returning the vehicle much sooner to profitable operation.

INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio



Easy, Fast, Economical!

The seal goes into the body panel, the glass into the seal, and the filler strip into the locking channel. That's all . . . a fast, low-cost, one-man job . . . done once . . . for permanent weatherproofing!



Self-Sealing Weather Strip

(PATENTED)

CCJ News Reports

Continued from Page 182

of high axle loads on highway design and operation. Paul Huber, of the Fram Corp., will present the report of the Automotive Traffic Noise Subcommittee, and R. C. Kerr, of Arabian-American Oil Co., will review automotive transportation in Saudi Arabia. H. H. Allen and Louis Reznik, of Section of Safety, Bureau of Motor Carriers, will report on the relationship between maintenance and motor car-

rier accidents, and A. H. Easton, of University of Wisconsin, will discuss the results of experiments to ascertain the traction and stability of front, rear, and four-wheel drive trucks.

Truck Accidents Low

The nation's trucking industry won top honors for safety performance among all classes of vehicles in 1949, according to statistics compiled by the National Safety Council. As in 1948, trucks had a lower accident ratio than passenger cars, taxis, buses and motorcycles.

National Safety Council records show that trucks were involved in 15 per cent of all accidents in 1949, although trucks constituted 17 per cent of the total vehicle registration.

The Council's report on accidents per 100,000 vehicle miles driven revealed that trucks have a low accident rate in relation to mileage traveled, and that this rate has been declining over the last three years. Trucks reporting to the Council had an accident rate of 3.40 per 100,000 miles, as compared with 4.59 for buses and taxis.

Intercity trucks, which railroads have attacked as "unsafe," actually had the best safety rating of all trucks last year. Of the "big" intercity trucks, common carriers had an accident rate of 1.11 per 100,000 miles and private carriers a rate of only 0.63.

Industrial Notes

Ideal Industries, Inc., Sycamore, Ill., recently purchased Pyramid Products Co., Chicago, Ill., manufacturers of wire stripping equipment.

Seiberling Rubber Co. is enlarging its government sales department and has opened a Washington sales office.

The Minnesota Mining & Mfg. Co. has announced plans for the construction of a \$250,000 branch warehouse and office building in Cleveland, Ohio.

Operations have started on construction of the new building which will house the district offices of various sales divisions of The B. F. Goodrich Co. in Philadelphia.

Tuthill Spring Co., Chicago, Ill., manufacturers of leaf, coil and helper springs, announce the appointment of G. W. Klier Co., Atlanta, Ga., as exclusive sales representative in the states of Ala., Miss., Fla., Ga., N. C., S. C., Va. and Tenn.

Walker Mfg. Co. of Wisconsin and The Deluxe Products Corp. announce that the machinery, tools, patterns, and equipment of the Deluxe Products Piston Div have been sold to The Ohio Piston Co., Cleveland, Ohio.

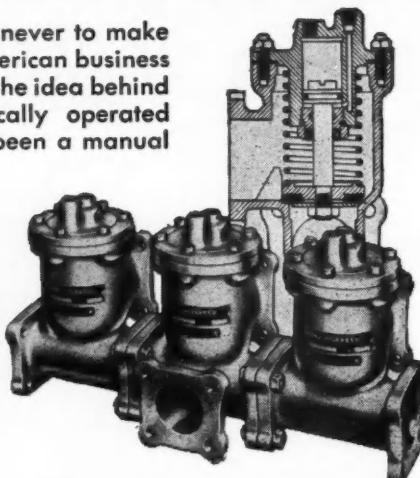
"Masterline" is the new trade name just announced by Little Giant Products, Inc., for its line of trailing axles. Freight-Master, Cargo-Master, Load-Master and Super Load-Master are the new trade names which have been selected for different models.

International Harvester Co. has been asked by the department of defense to undertake production of an army ordnance armored utility vehicle of the track-laying type, to be used as a personnel carrier. The Melrose Park (Ill.) Works will build the vehicle. The erection of a new building will be necessary.

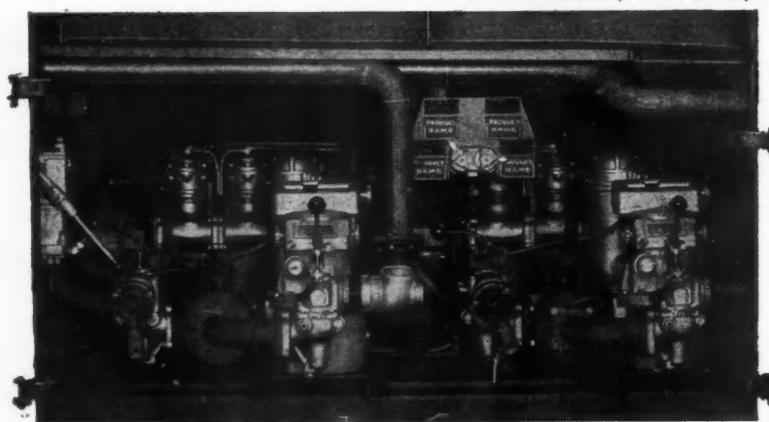
(TURN TO PAGE 186, PLEASE)

NEW S & J HYDRAFOLD Increases Unloading Efficiency

IT'S AN OLD SPANISH CUSTOM — never to make two motions when one will do. In American business thinking, that spells efficiency. That's the idea behind the HYDRAFOLD, a new hydraulically operated manifold. Manifolding has always been a manual operation, and often a very confusing one. Opening compartment discharge valves has been done far more efficiently. S. & J. now brings petroleum transporters a new standard of efficiency—the same hydraulic pressure which opens the internal safety valves, simultaneously opens the hydraulic manifold. All the operator does is to set the pointer of the 4-Way S. & J. Distributor to the name of the product to be dumped, stroke the handle of the hydraulic pump—both valves open simultaneously.



Shown below is an efficiently arranged discharge compartment. Note the 4-Way Distributor in the upper right center, and the hydraulic operator at the extreme left, which actuates both internal safety valves and Hydrafolds.



Shand and Jurs Co.

NEW YORK 276 Madison Ave. CHICAGO 332 So Michigan Ave.

HOUSTON 610 M. & M. Bldg.

MONTRÉAL 260 Notre Dame St.

TULSA

310 Thompson Bldg.

VANCOUVER 530 Beatty St.

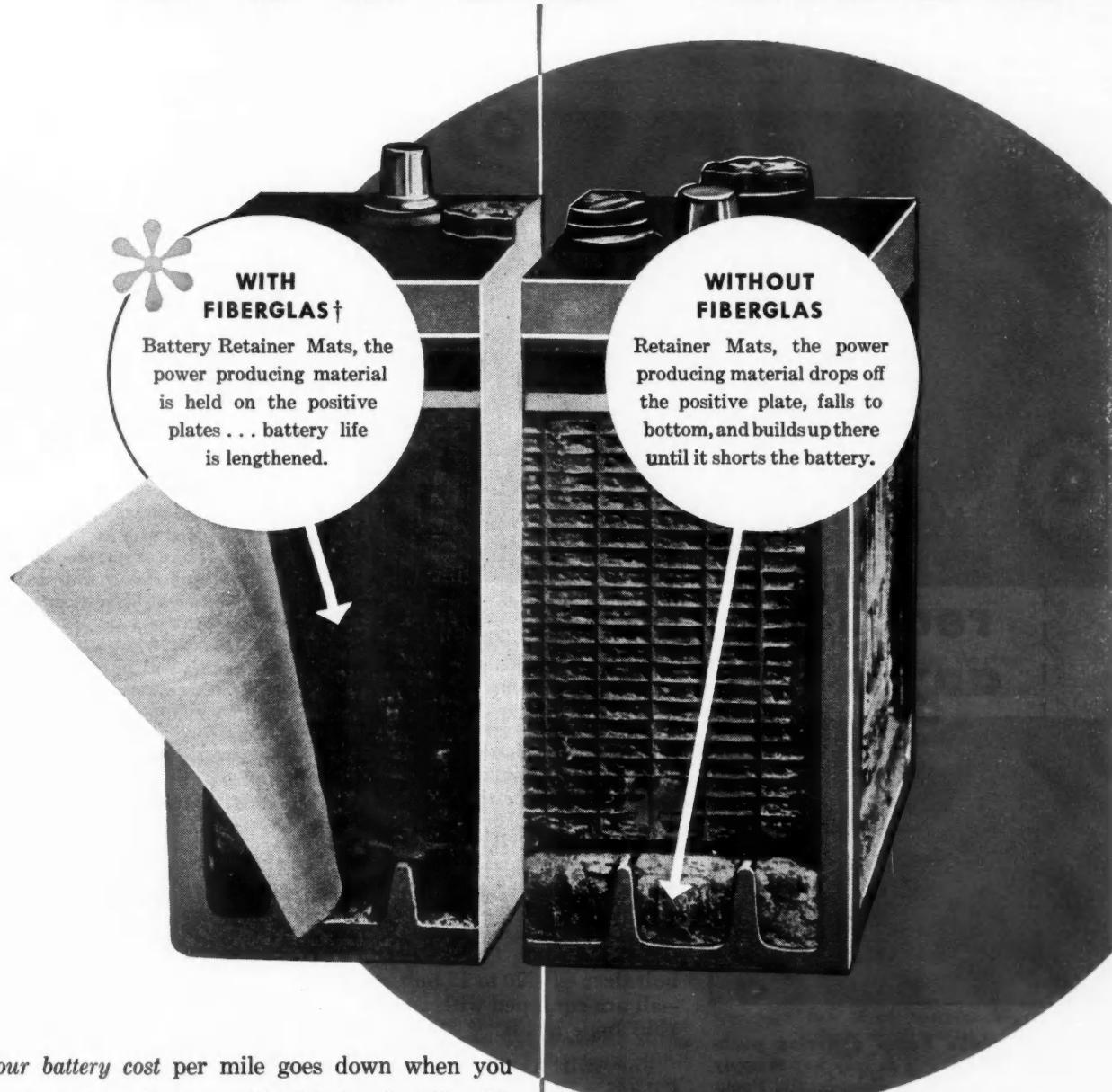
LOS ANGELES 714 W. Olympic Blvd.

DARLINGTON, ENGLAND

3000 Western Ave.

Mile for mile, a double-insulated* battery

COSTS LESS



Your battery cost per mile goes down when you use batteries that are "double-insulated" with Fiberglas Retainer Mats. That's why so many fleet operators who figure down to the last penny have standardized on these better batteries. That's why battery manufacturers offer them in their heavy-duty truck and auto lines.

For longer service, lower cost,
get batteries that are "double-insulated"
with retainer mats made by

OWENS-CORNING
FIBERGLAS

*FIBERGLAS is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for products made of or with glass fibers.

CCJ News Reports

Continued from Page 184

Scare Buying Ups Tire Sales

The effects of the "scare-buying" during July are seen in an increase in manufacturers' shipments of truck and bus casings. The July total of 1,618,631 units was 15.77 per cent higher than the June total of 1,398,120 and 80 per cent higher than the July 1949 shipments which totalled 898,304 tires. Replacement shipments of truck and bus tires during July 1950 were 117 per cent higher than the same month a year ago. Production of truck and bus tires during

July 1950 amounted to 1,160,050 units, compared with 1,169,376 in June. The high level of shipments resulted in a reduction of manufacturers' inventories of 26 per cent to 1,314,398 from 1,774,829 at the end of June 1950.

Shipments of automotive tubes rose 13.84 per cent to 9,629,335 units from 8,458,809 in June. Production of tubes dropped back to 6,916,496 units from 7,536,925 the month before and tube inventories declined 25 per cent to 8,422,233 from the 11,248,213 on hand at the previous month end.

Order Limits Auto Replacement

The General Services Administration has set up a list of 11 critical materials and

ordered Government agencies to conserve them. The order also applies to purchases of motor vehicles, typewriters, steel filing cabinets and other equipment using critical materials.

The order listed as "critical materials at this time" aluminum, cement, copper, lead, leather, lumber, paper, rubber (synthetic, natural or in combination), steel, wool and zinc.

Under terms of the order Government-owned passenger vehicles may not be replaced until they have 60,000 miles or six years' use and standard trucks of one and a half tons or less must have 50,000 miles or six years of use. If the vehicles are part of a fleet of eight or more, no more than 25 per cent may be replaced in any one fiscal year. Motor trucks of more than one and a half tons, construction equipment, earth-moving equipment and office machinery are to be replaced only when repair costs are so great that continued operation becomes uneconomical.

Edward Plowman Heads "Military Traffic Service"

A new staff office in the Defense Department to deal with military transportation and the problems that are confronting business and industry in the movement of critical military material has begun functioning.

Edward G. Plowman, a vice president of the U. S. Steel Corporation, who was named by Secretary Johnson to head up this organization, is already at work in his headquarters in the Pentagon Building. His office will work closely with the Munitions Board, which will be advisory on rate matters, and with the Joint Military Transportation Committee (of the Joint Chiefs of Staff), which will be advisory on coordination and requirements.

The Joint Military Transportation Committee is composed of Major General Frank A. Heileman, Army; Major General William E. Farthing, Air Force; and Rear Admiral Thurber, Navy.

Selective Service Prepares Manpower Analysis

The Selective Service System has compiled an analysis sheet which may be used by employers to take an inventory of their employees from the standpoint of possible selection for military service. This sheet is not required by the Selective Service System, but has been compiled for the benefit of employers to check their own work force. In addition to the information on this sheet, the question of whether or not a person is in the Reserve or National Guard, the number of dependents, etc., should be taken into consideration. These sheets may be obtained from the Selective Service headquarters in each state by those employers desiring to use same, and the preparation of this manpower inventory should provide valuable information for possible future use.

END

Please resume your reading on P. 31

COMMERCIAL CAR JOURNAL, October, 1950



the
wrench
that
reaches
any bolt



CP Pneu-draulic Pump powering push-and-pull ram — Here's an easy way to apply a giant's strength. 15-lb Pneu-draulic Pump will power any hydraulic equipment now operated by hand, by merely attaching pump to a compressed air line. Throttle can be controlled by knee, foot, elbow or hand.

Thanks to its detachable angle head, this CP-750 Air Impact Wrench is making easy work of running a cap screw in a mighty awkward spot.

And controllable power assures running on nuts and cap screws to proper tightness.

In the complete line of CP Controllable Air Impact Wrenches there's a size suited to any nut or bolt on car or truck. Capacities: CP-730 to 7/16" bolt size; CP-750 to 5/8" bolt size; CP-770 to 1" bolt size — all are equipped with detachable angle heads.

For still heavier jobs, the CP-365, with a capacity to 1 1/4" bolt size, is available in straight and angle head models.

Write for full information.

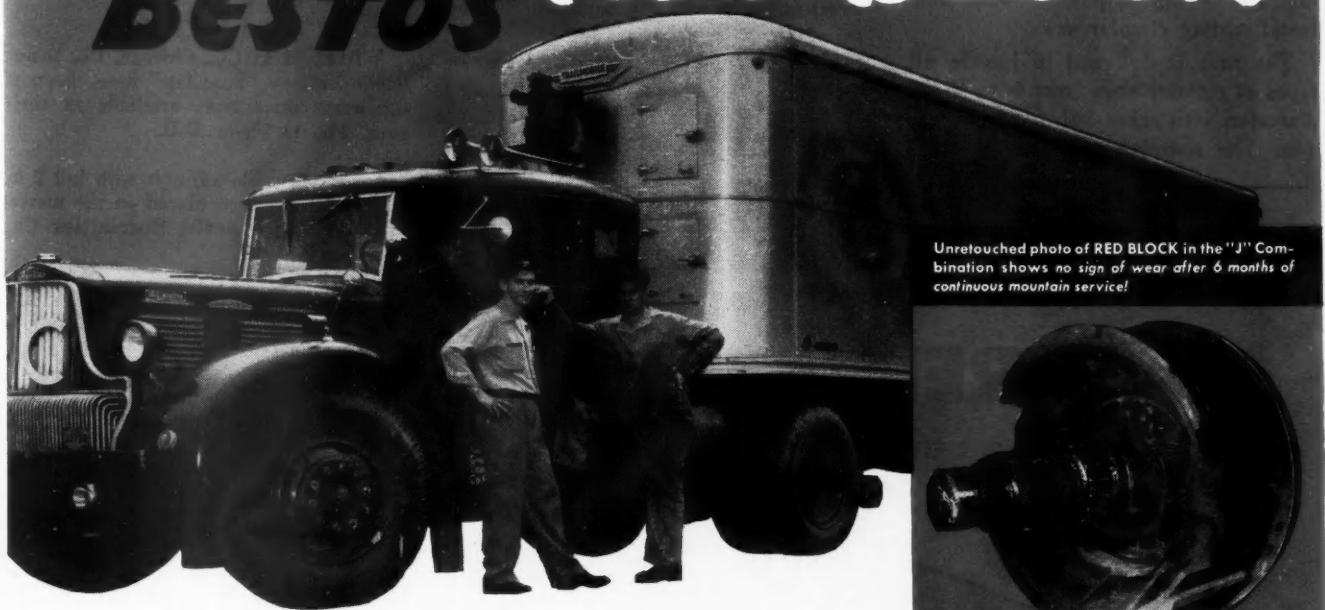


**CHICAGO PNEUMATIC
TOOL COMPANY**

General Offices: 8 East 44th Street, New York 17, N. Y.

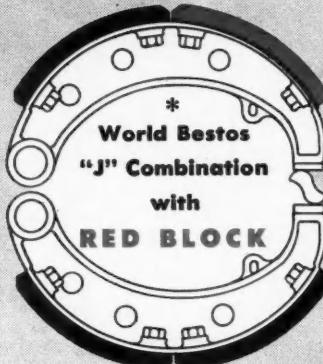
AUTOMOTIVE SERVICE EQUIPMENT • FENDER IRONS • ELECTRIC TOOLS
AIR IMPACT WRENCHES • AIR COMPRESSORS • PNEU-DRAULIC PUMPS

Brake Fade Eliminated with **WORLD BESTOS RED BLOCK**



Mr. Donald B. Hamill, driver, and Mr. Harold Collier, owner of the "260" Brockway-Trailmobile rig, report top performance with World Bestos RED BLOCK.

Unretouched photo of RED BLOCK in the "J" Combination shows no sign of wear after 6 months of continuous mountain service!



Guaranteed **NO FADE**
(HEAT OR WATER)

Amazing RED BLOCK in the "J" Combination* Completely Solves Fade Problem for Large Eastern Fleet

Collier's Truck Service, Uniontown, Pennsylvania, operating heavy duty units in mountainous eastern states, formerly had difficulties with fading brakes and wornout blocks. Since equipping with World Bestos RED BLOCK Mr. Collier reports, "We haven't had a single case of *brake fade* and are getting twice the *mileage* between relines. It is without a doubt the finest brake block I have ever used."

The sensational new World Bestos RED BLOCK . . . the only heavy duty brake block with a *no-fade* guarantee (Heat or Water) . . . was developed especially for trucks, trailers, and buses in extremely severe service. Assures high friction, long life and reduced heat checking.

Read what Fleet Operators across the country say about its amazing performance:

MIDWEST:

"Not a single case of brake fade nor any evidence of heat-checked brake drums. RED BLOCK really solves the trucker's biggest brake problems!"

(Signed) V. T. Johnson, Garage Supt.
Ziffrin Truck Lines, Inc.
Indianapolis, Indiana

WEST:

"Our fleet operates over the long steep grades of the Rockies and the Sierras. World Bestos RED BLOCK has eliminated fading and heat-checking problems completely."

(Signed) Ronald Norton, Owner
Norton Fruit Company
Provo, Utah

WEST COAST:

"90% of our operation is over heavy-traffic mountain grades and brake fade is quite a problem. World Bestos RED BLOCK has eliminated fading, reduced drum wear, and increased brake life one-third."

(Signed) Cecil Z. Green, Mtn. Supt.
Western Milk Transport
Pacoima, California

RED BLOCK gives perfect braking efficiency under the most severe operating conditions



WORLD BESTOS
NEW CASTLE, INDIANA

- If your jobber cannot supply you write directly to World Bestos for complete information.

New Product Descriptions

Continued from Page 78

P19. Saw Shop

A complete bench machine for sharpening and fitting circular saws handles jointing, gumming, tooth forming, and setting of popular wood and metal cutting circular saws.

The unit is designed to handle all types of circular saws from 4- to 48-in. diameter, with arbor holes from $\frac{1}{2}$ - to 2-in. The complete assembly includes

$\frac{1}{4}$ hp split phase ball bearing motor, 3450 rpm for 110-120 volt, 60 cycle AC power; built-in off-on switch, 8-ft rubber-covered cord and socket plug; dual purpose wheel arbor, operating in precision ball bearings, one end for 8-in. diam. grinding wheel for saw work, the dual-purpose end of threaded shaft for use as bench grinder, flexible shaft work, etc. Belsaw Machinery Co., Kansas City, Mo.

ASSURED QUALITY



Behind all OXWELD Welding Rods are two good reasons for better and faster welding at lower cost.

One: Their rigid specifications are carefully worked out to give you the exact strength, ductility, grain structure, machinability, surface finish, and other weld qualities you want.

Two: Their manufacture is checked all the way along the line by qualified LINDE engineers who see that every rod conforms strictly to specifications.

So every OXWELD Welding Rod that goes to market is as perfect and free from objectionable properties or impurities as modern science knows how to make it. The OXWELD trade-mark is your guarantee of quality and satisfaction.

"Prest-O-Weld," "Purox" and "Oxweld" are trade-marks of Union Carbide and Carbon Corporation.

Order from your local Jobber

There is a PREST-O-WELD or PUROX Jobber nearby to serve you promptly. If you don't know him now, write us. The Linde Air Products Company, 30 East 42nd Street, New York 17, N. Y.

Look for this trade-mark

Oxweld

on the rod or on the box

Late Product Flashes

Burndy Engineering Co. has a new universal-type Hyspark ignition terminal for use on all makes of passenger cars, trucks, tractors and buses.

A new gasoline- and oil-resistant wire, called Geotrol, has been announced by General Electric's Construction Materials Dept.

Wittek Mfg. Co., Chicago, Ill., is now offering a new "Sure-Tite" hose clamp of the worm drive type, available in three sizes, $1\frac{1}{8}$ - to $2\frac{1}{4}$ -in. O.D.

A hook-on cable adjuster with full 2 in. of take-up has been placed on the market by South Gate Brake Specialties Co., South Gate, Calif.

Designed to speed up draining and servicing of crankcases, differentials, automatic transmissions and fluid couplings, a new extension pan which hooks over the rim of any drain bowl or bucket has been announced by the Alemite Div. of Stewart-Warner Corp.

Now being marketed by the Auto Lamp Mfg. Co., Chicago, is a completely new line of directional signal lights, designed for use on trucks, trailers, tractors, buses and commercial vehicles of all types.

A new tool for adjusting Wagner hydraulic brakes on late model International Trucks has just been announced by the Owatonna Tool Co., Owatonna, Minn.

Speco, Inc., Cleveland, announces an important improvement in its alcohol type anti-freeze, Freeze-Rem, which consists of the addition of a new type of rust inhibitor chemical known as Speconite.

On improved type of MELT, ice and snow-melting chemical, is announced by The Chem Industrial Co., Cleveland.

The product is now produced as minute pellets rather than in the previous powder form.

Miro-Flex Co., Inc., of Wichita, Kan., recently announced an improved tension grip for the new line of mirror housings manufactured by the Wichita firm. Miro-Flex just recently acquired the assets and manufacturing rights of the Inter-State Mfg. Co. of Chicago.

World Bestos' 1951 Brake Lining Bonding Program, features a newly developed Pyrobond Film, which is said to produce positive bonds, four times as strong as riveted linings, in 15 min.

P20. Bench Grinders

Four bench grinders are respectively: Model 470, a 6-in. grinder with a $\frac{1}{4}$ -hp motor and a $1\frac{1}{2}$ -in. wide wheel; (TURN TO PAGE 190, PLEASE)

from RAM HEAD to BASE...a real truck drivers jack!



Hein-Werner Hydraulic Jacks are built for heavy duty service

Take a tip from truck drivers who speak from experience. You can't beat Hein-Werner Hydraulic Jacks for ruggedness, ease of operation or dependability . . . Made in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity.

Ask your jobber, or write us, for details.

HEIN-WERNER CORPORATION • WAUKESHA, WIS.

Hein-Werner
HYDRAULIC JACKS

THE HEIN-WERNER line of hydraulic jacks is COMPLETE! It includes "Bumper-Lift" Hydraulic Jacks for passenger cars . . . Under-Axle Jacks for trucks and buses . . . "Swift-Lift" and Service Jacks for shop use . . . Cylinder Sleeve Pullers . . . Push and Pull Hydraulic Jacks for body, fender and frame work.

New Product Descriptions

Continued from Page 188

Model 471, a 6-in. grinder with a 1/4-hp motor and a 3/4-in. wide wheel; Model 475, a 6-in. grinder with a 1/3-hp motor and a 3/4-in. wide wheel; Model 478, an 8-in. grinder with a 3/4-hp motor and a 1-in. wide wheel.

On all models, motors are ball-bearing equipped, with bearings sealed against dirt. An on-and-off toggle switch is conveniently mounted in the base. Removable guards give added

convenience when using wire brushes and buffing wheels. Wheel speed is 3440 rpm. An 8-ft cord is heavy rubber covered 2-conductor type with two-prong rubber plug (3-conductor for the 8-in. grinder). Adjustable eyeshields are available as an extra.

Cummins Portable Tools, Div. of Cummins Business Machines Corp., Chicago, Ill.

P21. Gas Exhaust System

An exhaust gas removal system consisting of a door plate, flexible hose, an adjustable adapter designed to per-

mit use of motor analyzers, and a ventura nozzle, is said to take smoke and fumes from exhaust pipe to out-of-doors without heat loss in the service bays. Called the Exhaust-Dor system, no blower is used, but an air supply connection is provided to aid in removal of gases. Adjustable adapter on end of flexible hose is attached to exhaust pipe and ventura nozzle on the other end of the hose is placed through door plate and system is ready for operation. The National System of Garage Ventilation, Inc., Decatur, Ill.

P22. Truck Gate

A line of collapsible metal gates for trucks and trailers is made of No. 6 cadmium-plated wire of 6000-lb tensile



STAY on
the road and
KEEP moving
with...

CLAW^{*}
TIRE CHAINS

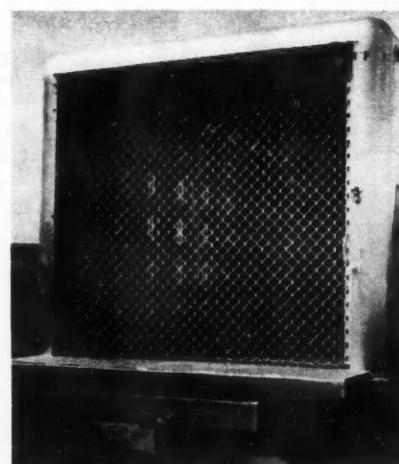
They GRIP because they CLAW

They're tough...they last...and that famous CLAW edge design really bites into hard ice and snow. Ask the biggest car and truck fleet operators why they stick to CLAW chains year after year. CLAWS are "traction insurance" and cost a whole lot less than delays and accidents.

COLUMBUS MCKINNON
Chain CORPORATION

General Offices and Factories: Tonawanda, N. Y.

Plants at Angola, N. Y.; St. Catharines, Ont., Can.; Vereeniging, So. Africa



strength. Wire is woven to an angle at the locking post, the angle being fitted with two hasps for a padlock and pin for locking. The manufacturer provides a guarantee against theft and loss of cargo with installation instructions.

As protection against the weather, the manufacturer also provided a waterproof duck curtain, of No. 10 duck, which opens and closes with gate operation and is fastened securely along the side posts and header. Gate Co. of America, Detroit, Mich.

P23. Fork Truck

Two new Lev-R-Matic controlled forklift trucks, both of 2000-lb capacity, feature a new, 3-cyl heavy-duty engine and improved visibility to speed-up materials handling. The operating controls completely eliminate all gear shifting.

Ease of maintenance is achieved through improved design of hood and location of engine accessories. Mobilift Corp., Portland, Ore.

END

Please resume your reading on P. 80



**Fleet Operation Demands
The Best in Oil Filtration**

wix
TRADE MARK REG.
**ENGINEERED FILTRATION PROVIDES
ONE QUALITY ONLY THE BEST!**

WIX doesn't take anything out of its product line, graded down to a fleet price, but the original, top quality, heavy duty WIX Cartridge, engineered precisely for every filter on your pay load units.

Good fleet maintenance demands an Oil Filter Cartridge that keeps lubricating oil and engines cleaner—longer, with maximum time between replacements. WIX delivers it with its famous Micro-pore construction, under electronic control, insuring always uniform, high sludge capacity.

In trim, prick-punched, lithographed cans with big bale handles and built-in grip seals, or in the famous WIX Sock Type construction, here's the best in fleet oil filtration.

wix
TRADE MARK REG.
FILTEREFLS

OIL FILTERS
WIX ACCESSORIES CORP'N • GASTONIA • N.C.



CANADIAN FACTORY: WIX ACCESSORIES CORP. LTD., 11 Wabash Ave., Toronto 3, Ont.

New INTERNATIONAL Diesels in 165 to 300-hp Range

Six optional Cummins diesels available for units characterized by set-back front axles

A NEW line of heavy-duty, four- and six-wheel, diesel-powered trucks and tractors with a gross combination weight ranging up to 76,800 lb, has been introduced by the International Harvester Co.

Designed for on and off-highway operation, the line includes models available in the LD-304 Loadstar series and the LD-305 Roadliner series. The latter models are primarily designed for tractor semi-trailer operations.

Six optional Cummins diesel engines ranging from 165 to 300 hp, are offered. The standard engine employed is a Cummins HRB-600, which is rated at 165-hp at 1800 rpm. It has a 15.5 to 1 compression ratio and a displacement of 743 cu in. The other optional engines offer power at 175, 200, 225, 275, and 300 hp.

The wide-tread, set-back front axles, which distinguish the new line, have 12,500-lb capacity. Short wheelbases and reduced steering effort through the use of newly developed 4-in. springs and threaded, wear proof pins and bushings are design features of the models.

Four, five and ten-speed transmissions are optional. Auxiliary transmissions and two-speed rear axles are available. Aluminum transmission and rear axle components are also optional.

The steel-flex frame construction employs frame cross members and brackets which are hydraulically cold-squeeze riveted in place. Stress on the engine fly wheel housing is eliminated with a special tubular cross member installed at the rear of the engine. Side rails are made of straight channel heat-treated chrome manganese steel. Roadliner frames are 9 $\frac{7}{8}$ -in. section and Loadstar frames are of heavier 10 x 5/16 x 3 in. construction.

The all-steel cab is attached to the frame on rubber mountings. It is 58 $\frac{1}{4}$ in. wide, 51 5/16 in. high and 58 3/16 in. long. The individual driver's seat, made of foam rubber, is fully adjustable. A sleeper cab with full 74-in. wide sleeping compartment and sliding rear window is available.

END

Fleet Course Well Attended

Approximately 50 fleet representatives attended the record-breaking 12th Annual Motor Fleet Supervisor Training Course, held at Pennsylvania State College, Sept. 11 to 15. Readers are reminded that virtually complete listings of these and similar courses sponsored by colleges and universities throughout the country appear regularly in the "Dates and Doings" column on page 23.



New Cleveland Products

To best meet the needs of
Modern Body Builders

New Door Holder
#2445-B

of drop-forged steel, for the largest of van doors. Cannot be accidentally released.

New Door Handles
#2396-D
#2396-C

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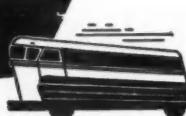
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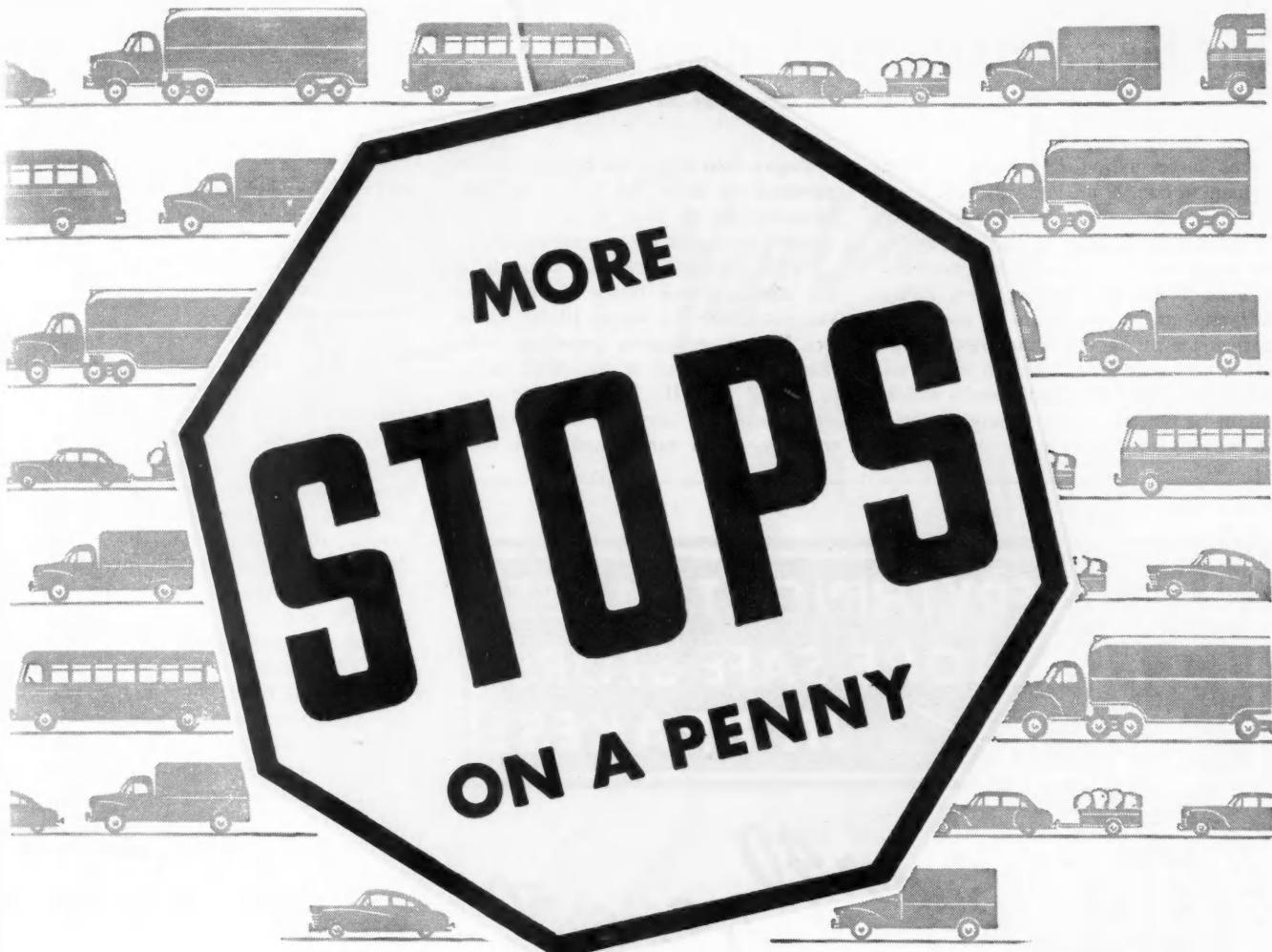


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Bus Men Mobilize for Wartime

Continued from Page 55

much longer period is necessary to train a man to handle an intercity job.

"The balance of our bus industry personnel is made up of service people, terminal employees and office workers. Among these employee groups, many adjustments can be made to meet the exigencies of unusual manpower problems. At no time, however, dare we lose sight of the disastrous results which might be brought about through failure to provide for adequate key personnel."

Bogan then urged the industry's management to take the following steps immediately so that it will be adequately prepared for any eventuality:

"First, make a careful estimate of the numbers and types of employees you would need to supply 10, 20, 30, 40, and 50 per cent more passenger miles than you operated at the peak period of World War II. From your records on operations during the previous emergency you can compute the num-

ber of each type of employee necessary to produce a given volume of vehicle miles. To arrive at vehicle-mile requirements, I suggest that you use the load-factor experience of World War II, or, if figures are not readily available, assume a maximum average load factor of 7 per cent.

"Second, make a careful check of your present personnel as to the likelihood of each individual being called for military service. The Selective Service System has prepared a handy form, the Civilian Users Force Analysis Sheet, which you may obtain for this purpose. On the basis of your experience in World War II, you can figure that about 56 per cent of your drivers and 43 per cent of your mechanics will be eligible for military service when, and if, men up to age 38 are called. About 6 per cent of our drivers and 5 per cent of the mechanics—being under 26 years of age and otherwise eligible—are subject to call right now.

"Third, in the light of the foregoing calculations, figure out how much of the transportation job you could do with women and others not subject to military service. Then develop specific plans for following through on that basis.

"Fourth, make sure that your key supervisory staff is thoroughly informed on these problems so that they can take over their added duties if any emergency arises. This is particularly important in connection with the recruiting and training of new employees. Thought should be given, for example, to readying training programs and preparing simplified procedures and manuals of instruction for each type of job you have—against the day when fast recruiting and rapid, on-the-job training might become all-important.

"Fifth, make certain that you and your supervisory staff take all possible steps to improve employee morale on your property. This will have a most important effect in case it becomes necessary for you to move into an all-out emergency effort. It will also tend to minimize the results of personnel raiding which might take place in advance of any sweeping new manpower controls. Make sure also that there are

(TURN TO PAGE 196, PLEASE)

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Super 40 and Super 50

Hydraulic Brake Fluids

For safe, long-lasting braking efficiency, the EIS line of Super Brake Fluids remain unequalled in performance and economy. They meet SAE Specifications . . . mix perfectly with all other approved brake fluids.

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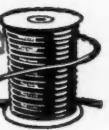
"Undersize cable will cut performance far below normal. For instance, a lamp wire that's too small can easily lose 10% in voltage, and this 10% will mean a full 30% loss in the candlepower of the lamps! Packard spool cable cartons carry a chart showing the correct gauge size of cable for various loads and lengths of cable required. For best results, use Packard cable for all your jobs."

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FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

Bus Men Mobilize

Continued from Page 194

no subversive elements represented among your employees.

"Sixth, get to know local and State draft and other manpower officials. Help them to realize the indispensability of bus transportation, particularly in the event evacuation work became necessary."

FUEL AND LUBRICANTS—L. S. Wescoat, president, Pure Oil Co., sounded a cheerful and encouraging note to the serious proceedings. "In the

limited war in which we are now engaged, there can be no question that motor fuel will be ample, both for the war and for domestic use.

"If the limited war should turn into an unlimited struggle for survival, it is plain to all of us that it would require many sacrifices on the civilian front. But as to motor fuel, I can say that America is better prepared to wage war than we were either in 1917, or 1941. Since V-J Day, the petroleum industry has invested 8 billion dollars in finding new oil fields and in expanding and modernizing facilities in all branches.

"We have drilled 175,000 wells since

the shooting stopped, and despite unprecedented peacetime demands, greater even during the peak of the war effort, we now have known underground reserves greater than at any time in the past. Our total known reserves of crude oil are now about 25 billion barrels. This is a gain since 1941 of over 5 billion barrels, which equals 2½ year's demand at the present rate of consumption. But in addition to crude oil, the industry has other liquid hydrocarbons available for motor fuel which makes a grand total, as of last January, of 28,378,000,000 barrels.

"This all-time record amount of underground reserves is available to be drawn upon tomorrow like money in the bank.

"In addition to these figures at the well, our refining capacity has been increased since 1941 from 4,400,000 barrels a day to 6,700,000, a gain of 50 per cent.

"Along with these quantity figures, the quality of motor fuels and lubricants is constantly improving, due to the millions of dollars which the industry is spending in its research laboratories. Among the important developments in research and refining are the liquid petroleum gases, butane and propane used in mass transportation.

"As a large number of your buses use diesel fuel oil, let me say that the petroleum industry should have no greater difficulty in supplying diesel fuel oil than in supplying gasoline.

"In the event of all-out war, the priorities given military demand for aviation gasoline and jet fuel may reduce the present quality of both diesel fuel oil and gasoline. But even so, the quality, with motor adjustments, should give at least as efficient if not better service to commercial users.

"As I recall, diesel fuel oil was not rationed during the last war. If some petroleum products are again rationed, diesel is less likely to be rationed because it furnishes more power, per barrel of crude petroleum used in its manufacture."

With respect to lubricants, Wescoat said, "Although less well known than others, the improvement made in heavy-duty lube oils is one of the most notable achievements in petroleum technology in recent years. The government's specifications for a universal lubricant of the highest quality for heavy-duty military use are now being equalled in lube oils for commercial use. These oils require added chemical ingredients such as detergents. If a shortage of these ingredients should develop as a result of increasing military demand, it would necessarily be at the expense of lubricants for private use. In that case, the private automobile would feel

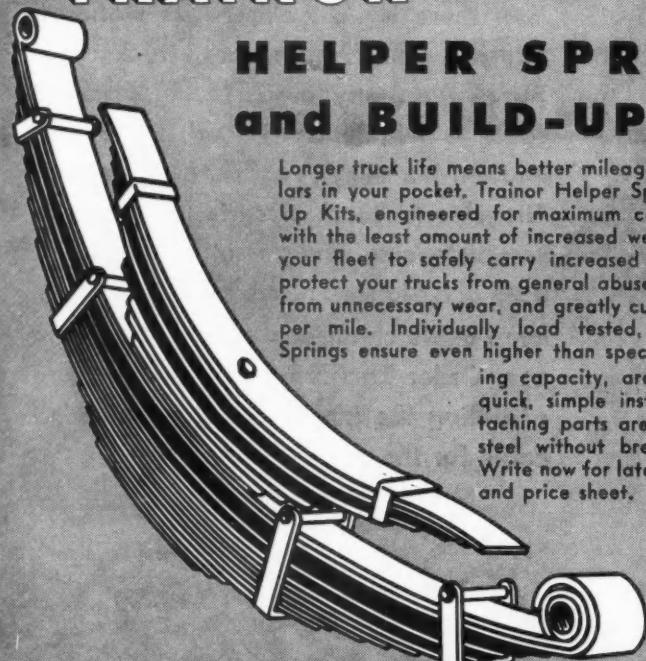
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with your
Springs down*

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Longer truck life means better mileage, and extra dollars in your pocket. Trainor Helper Springs and Build-Up Kits, engineered for maximum carrying capacity with the least amount of increased weight, will enable your fleet to safely carry increased loads. They will protect your trucks from general abuse, your truck tires from unnecessary wear, and greatly cut down your cost per mile. Individually load tested, Trainor Helper Springs ensure even higher than specified load carrying capacity, are engineered for quick, simple installation. All attaching parts are made of spring steel without breakable castings. Write now for latest free literature and price sheet.



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COMMERCIAL CAR JOURNAL, October, 1950

Bus Men Mobilize

Continued from Page 196

the impact rather than heavy-duty trucks and common carrier buses."

EQUIPMENT AND REPAIR PARTS—R. C. Hoffman, Jr., president, Carolina Coach Co. and final speaker at the NAMBO Mobilization Forum, discussed present and probable future vehicle requirements and replacement parts needed for their maintenance.

From the standpoint of vehicles, he appraised World War II and the pres-

ent passenger-carrying capacity of intercity buses and the means for increasing that capacity. "Intercity bus transportation reached its peak in 1943," he said, "when a total of 27.4 billion passenger miles was reported. The 27.4 billion passenger miles of intercity bus travel in 1943 was supplied by an estimated total of 21,000 buses operating about 1.32 billion bus miles. The average load factor for that year is estimated at 70 per cent.

"The year 1943 was also the peak year from the standpoint of passengers carried in intercity service, when the

total is estimated to have approached three quarters of a billion."

As for the present, Hoffman said, "the number of intercity buses currently in service is approximately 26,000, or 25 per cent greater than we had in 1943 when we reached our peak; both in passengers carried in intercity service, as well as in passenger miles operated. Not only do we have a greater number of buses in operation now, as compared with 1943, but about half of them have been built since 1945, when hostilities ceased.

"By way of contrast, I would remind you that many of the buses with which we faced the advent of World War II were buses which, except for the war, would previously have been retired for obsolescence. It is also worthy of mention that the average number of seats per vehicle of our present fleet is considerably greater than in World War II.

"Our best estimates, based on studies made by NAMBO's Research Division, indicate that we are now prepared to provide an annual total of 29½ billion passenger miles. This figure is more than a third greater than the 1949 traffic, and to reach it, not more than a 60 per cent load factor would be necessary. Neither would it be necessary to operate at anything more than conservative annual mileages.

"To the best of our knowledge and belief we could, with our present fleet, take care of any traffic load that we might be called upon to carry under peacetime conditions. Our studies lead us to believe further that should we be faced in the future with a national emergency we could immediately expand our potential carrying capacity by increasing vehicle mileages; by further increasing our load factor through elimination of unessential services, as was done in World War II under ODT regulations. We estimate that by the adoption of such measures our present fleet would provide approximately 43 billion passenger miles annually, or about 60 per cent more than the 1943 peak."

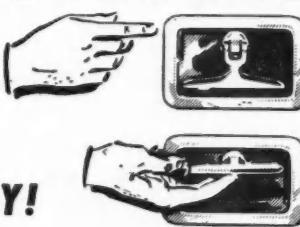
In mentioning difficulties experienced operating under the various World War II controls and regulations, Hoffman also mentioned the 35-mile speed limit. In support of the other speakers' comments, he pointed out that this limitation actually resulted in the use of more rubber by actual weight than was consumed by intercity buses at 40 or 45 mph.

From his own topic's point of view, the 35-mile limit "had the effect of taking about 4000 intercity buses out of service in World War II."

"The truth of this startling statement can readily be realized when ac-

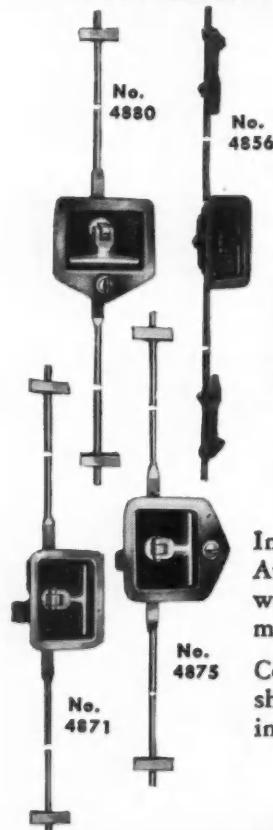
(TURN TO PAGE 200, PLEASE)

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When You Want Them
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DOOR LOCKS



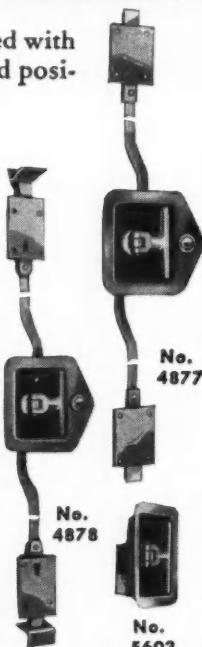
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Bus Men Mobilize

Continued from Page 198

count is taken of the fact that, at such unduly restricted speed, the time to complete a trip of any given distance was increased approximately one-third; while, at the same time, reducing the number of trips a bus could make per day, per week, or per month and, obviously, reducing, correspondingly, the number of passengers that could be transported by any one bus in any given time.

"The 35-mile limitation resulted also in increased wear and tear on trans-

missions, differentials, brakes, and other vital and hard-to-replace parts. This was brought about by the necessity for more frequent gear shifting and application of brakes, and cruising at speeds lower than those at which intercity buses are designed and geared to give maximum performance with corresponding economy of operation."

Hoffman next reminded the intercity operators which replacement parts were on the shortage list—among them transmissions, crankshafts, axles, pistons, bearings, springs, steering knuckles and batteries—and that when they became

available the quality of some necessarily were inferior.

With regard to future controls, he said the situation was so confused as to make it impossible to determine what to expect and what steps to take. For example, Hoffman said that while President Truman said he would place the responsibility for transportation controls in the hands of ICC, if this step would be necessary, newer developments may prevent this desirable move. Among the newer developments are the pending 1950 Defense Production Act, passed by the Senate and House but in the hands of a conference committee to resolve some differences; the assignment of responsibility for priorities and allocations to the Department of Commerce, under Major General William Henry Harrison, president, International Telephone and Telegraph Co., who has the rank of Under-Secretary of Commerce and whose organization setup will be similar to the War Production Board of World War II; and a special subcommittee of the House Interstate and Foreign Commerce Committee created "to conduct a continuous examination of the preparedness of the industries under the committee's jurisdiction to meet the needs of the present emergency."

In the light of these developments, Hoffman said it was inevitable that there would be differences of opinion. He suggested that intercity operators should contact the various members of the House Interstate and Foreign Commerce Committee's special subcommittee to get "such information as we would find helpful to our Association in forming plans for the emergency of possible all-out war."

Hoffman concluded his remarks urging all to "take immediate inventory of our transportation needs—project them as accurately and fairly as we can in the fact of the many unknown factors, to cover the various situations that we must anticipate and be prepared to meet."

"Furthermore, I feel that we should watch most carefully our Preventive Maintenance Programs. A large number of these programs have been greatly improved since the outbreak of World War II. I believe that if we can concentrate on the idea of really good Preventive Maintenance, it will go a long way toward helping us over the obstacles that we are bound to meet in case of short supply."

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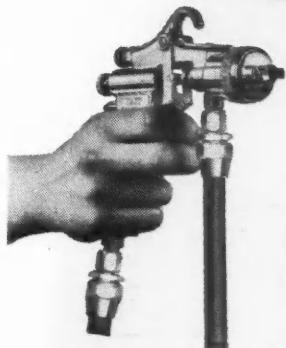
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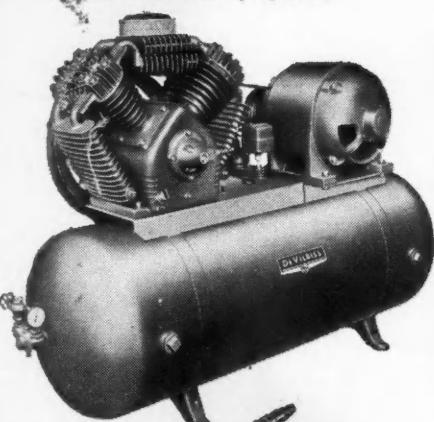
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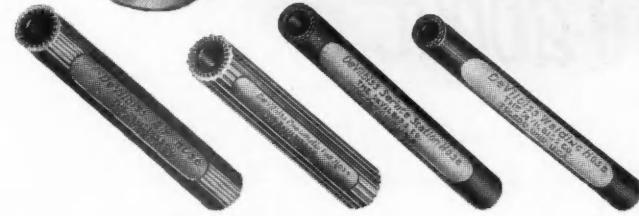


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means Quality in all four..

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EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

Conference Corner

Continued from Page 10

promise in optimum qualities for the various applications covered. However, in contractor and farm work a somewhat different situation presents itself in that field inventory frequently represents a problem especially where a job might be in progress at somewhat remote locations. Likewise the possibility of misapplication on a construction or farm job is considerably greater than in a service station or fleet shop where lubrication facilities are centralized and better trained personnel are employed. The possibility of contamination is also greatest on the farm or construction job where dust and/or water are usually plentiful.

For these reasons we feel that the farmer and the contractor can profit most from the multi-purpose grease development, and the benefits that accrue probably far outweigh the added costs. Whether truck fleet operators will find these lubricants attractive, we shall make no attempt to predict, but we suspect that many will not find the benefits sufficiently great to justify the added cost.

THE only advantage of general purpose grease is the saving of a certain small amount of trouble in application. The cost of general purpose grease is basically higher than that of most greases suitable for most automobile lubrication.

For the chassis lubrication of automobiles and trucks, chassis lubricant is satisfactory, and the best possible material for nearly all the lubrication.

Special greases, particularly wheel bearing greases, are an extremely minor matter from the volume point of view; consequently, to pay several cents a pound more for all greases in order to avoid using the special grease for such parts as wheel bearings does not appear to be justified at the moment.

This does not mean that in our opinion it is impossible to make general purpose greases which would be quite satisfactory. It merely means that we are convinced that the cost of lubrication would be considerably greater using general purpose grease instead of two or three standard greases.

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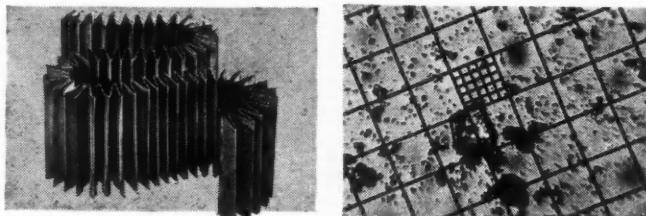
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Reduce refill bills, down-time, engine repairs. Your supplier has a Purolator Micronic* refill for nearly every vehicle or original filter. Phone or see him.





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Bus Men Mobilize

Continued from Page 200

ing before them the shadow of possibly greater events to come, bring us together in emergency session. The emergency is real. It is a time of national crisis. The crisis well may prove to be the most formidable in American history. It must be faced—now."

Harley L. Swift, chairman of ATA's War Program Committee, picked up this theme cautioning against complacency and unpreparedness. "As there was in 1941, when many in high places in the transit industry thought that there would be no rationing of gasoline and tires or restrictions on the building of automobiles, there seems to be a similar attitude this time."

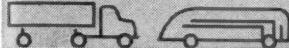
He urged the industry to get its "systems and equipment in order and in condition for a long, hard pull." Those of us who are in a position to purchase new equipment, should place these orders now. Those who cannot purchase new equipment, should go into an all-out program of rebuilding, repairing, and getting their tools in as good as new condition—keeping them in that condition. If war starts with an "A" or an "H" bomb attack, there will be no time to repair buses—there will be no time to reactivate buses in cold storage—there will be no time to buy or build additional buses.

A transit company well prepared will be one whose chief operating officials are key operating and planning men in the local, county, and state civil defense setup—it will be a transit company that has carefully considered its personnel situation, is busy training, and has replacements for every person of primary or secondary importance in its organization—it will be one whose equipment is in excellent condition, condition that will permit its operation away from home base, under abnormal and difficult conditions, for long periods—it will be one that has its employees instructed in, perhaps has had practice runs, on what to do should there be mass evacuations, much as they no doubt now have their garage men trained to act without confusion in a

(TURN TO PAGE 206, PLEASE)



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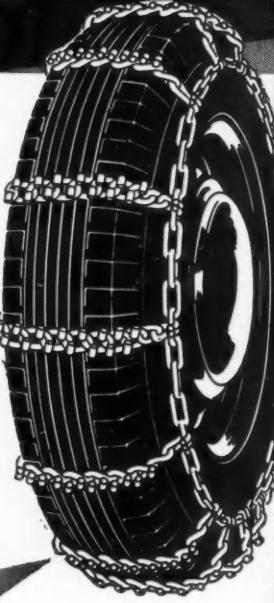
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McKay Multi-Grips are the only tire chains with ALL these advantages: two traction-bars per gripping link; case-hardened cross and side chains; *Klip-Lock* Fasteners that lock securely, unfasten with one hand and never jam or clog. Next time BE SURE. Get McKay Multi-Grips.

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Bus Men Mobilize

Continued from Page 204

case of fire—it will be one with an ample supply of tires, fuel lubricants and parts that, without hoarding, will carry it over any sudden emergency—it will be one that has its plans made for the kind of service necessary to serve its community best under and during any phase of any war situation."

Swift placed particular emphasis on the need for stressing the difference between intercity and local transportation. "I have been surprised in talking with big-wigs in Washington to discover that, while they have considered and carefully planned for the transportation of men and materials from city to port or from manufacturing plants to national defense depots by highway, rail, air and water, they have not even thought of the problem of transporting men from their beds to work benches and from their work benches back to their beds."

VEHICLES AND PARTS—J. H. Middlekamp, vice president, Mack International Motor Truck Corp. and vice chairman of ATA's War Program Committee, also recalled local transit's plight during the last war. "Urban transit was so neglected that toward the end of the war it was on the verge of collapse from lack of essential parts. We do not want to, we cannot afford to repeat this mistake again."

He urged the transit men to prevent a similar situation by a coordinated program, that will embrace both partial and all-out mobilization. "We all know," he said, "that anyone of many circumstances could plunge us suddenly from partial to total mobilization. The strategy of survival demands that we shall be prepared for both possibilities.

"Urban transit needs must be agreed upon, documented, registered and sanctioned now," Middlekamp said, outlining a coordinated program. "We operators and manufacturers must jointly agree on a two-pronged program of minimum requirements. One section of this program should be designed for a partial war effort, the other for an all-out war effort.

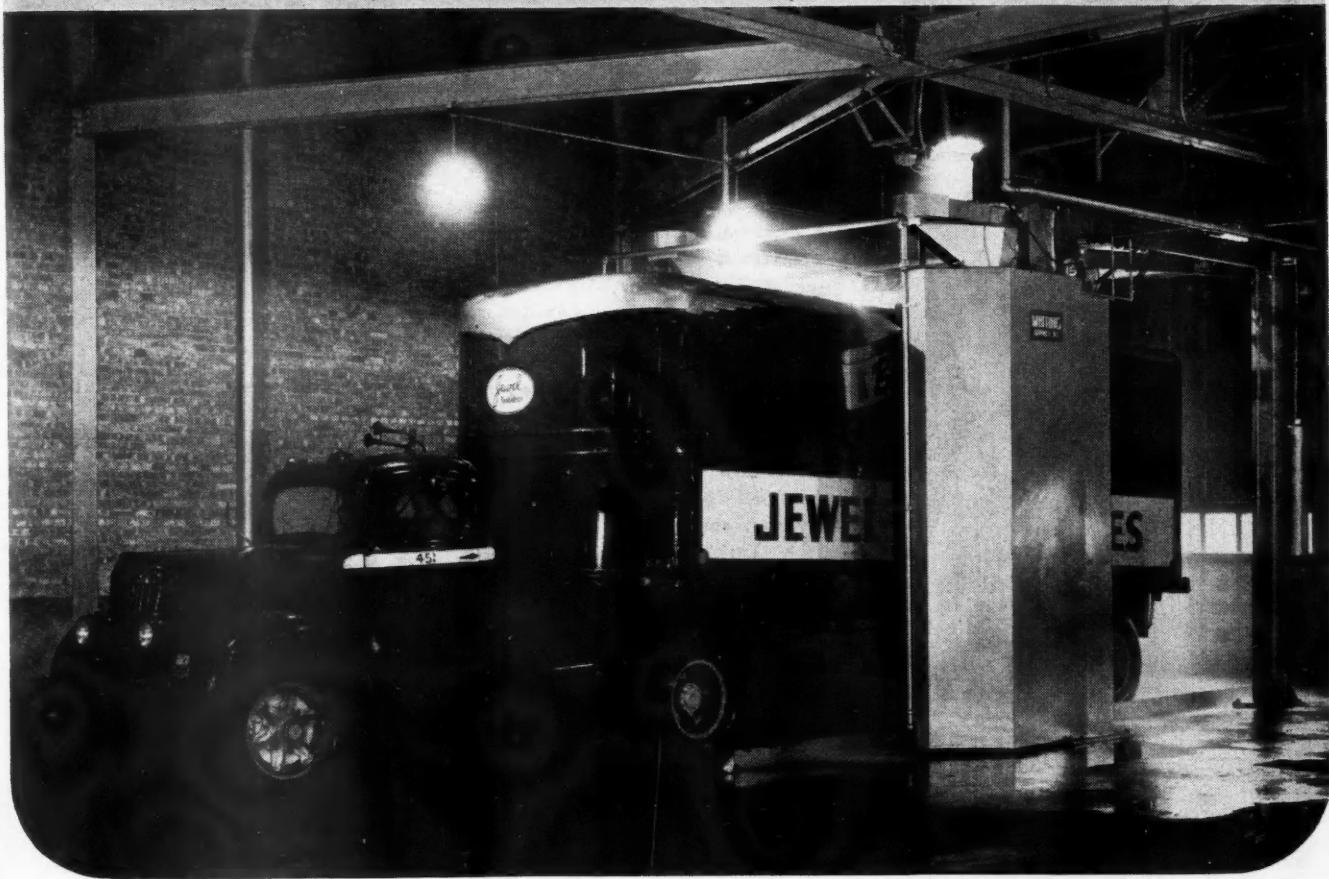
"This program should show—briefly and accurately—what the urban transit industry needs in each case. It should indicate the amounts of critical materials which the program requires to meet partial and all-out mobilization."

To show that ATA already was working for its members to that objective, he said it "has requested suppliers to convert their assembled vehicles into quantities of critical materials required to produce these vehicles in accordance (TURN TO PAGE 230, PLEASE)

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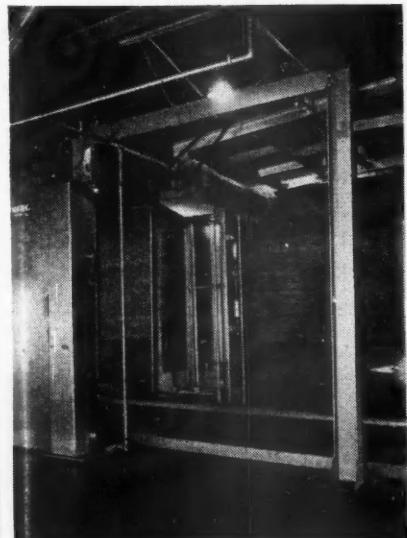
COMMERCIAL CAR JOURNAL, October, 1950

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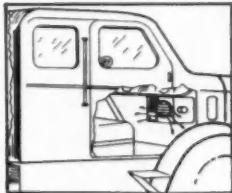
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Bus Men Mobilize

Continued from Page 206

with the World War II controlled materials plan.

"At the same time, ATA operating companies have been asked to indicate the dollar value of spare parts needed to maintain their current fleet of vehicles. They have also been asked to convert their general supply requirements into critical materials in accordance with the GMC plan.

"Gathering, compiling and interpreting this information will, of course, involve a great deal of work. But this work cannot be avoided if our program is to be assigned the role it must logically play in national defense.

"Once a gross allocation is assigned to a program such as ours, the necessary material is set aside in the national material bank. This is then drawn upon by each manufacturer supplying the industry with the quantities established in the approved program."

Because an all-out war at this time undoubtedly would include direct attack on our cities, Middlekamp said urban transit should provide for the shifting of large segments of our urban population, and ambulance service.

"New York City's Board of Transportation, for example, has placed an order with our company for 400 specially designed buses which can be converted into ambulances in a matter of minutes. Each bus will contain stretcher holders that will accommodate two tiers of stretchers without removing the seats.

"At the same time, Colonel Sidney H. Bingham, head of the city's transit board, has announced that New York will ultimately have a mobile fleet of 900 buses for evacuation purposes."

In support of his suggestion for immediate action, he indicated that already a shortage of some materials was being experienced. "The manufacturers are exerting every effort to fill your current orders for parts and equipment. But even this current rate of production is being throttled by material shortages.

"These material shortages exist now, when the impact of a war program has not yet struck industry. Imagine what it will be like later on—unless something is done about it now."

FUELS AND LUBRICANTS—D. S. Warning, assistant general manager, Distribution Economics Department, Standard Oil Company of Indiana, pointed out that even the current peacetime demands upon the petroleum industry are greater than those preceding World War II. "Most of you undoubtedly know," he said, "that there are approximately three times as

(TURN TO PAGE 233, PLEASE)

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Bus Men Mobilize

Continued from Page 230

many buses in operation now as there were 10 years ago. However, you may not be aware of the rates at which some other petroleum consuming units have increased. Passenger cars have grown by roughly 50 per cent. Farm tractors are up over 100 per cent. The use of space heaters is now four times as great, while there are nearly 16 times as many diesel locomotives as there were 10 years ago. These are some of the factors contributing to the growth of petroleum products."

Warning then drew the following conclusions:

"1. A moderate reduction in gasoline octane numbers appears to be the only probable change in the petroleum supply outlook with conditions as they are today. Restrictions on civilian use of gasoline and fuels should not be necessary as a result of the Korean War.

"2. In the event of a major war, military demands for petroleum products will probably be so large that the civilian economy will be called on to reduce consumption of these products rather drastically. Even those industries considered essential to the war effort will probably be required to 'tighten their belts.'

"3. The relative severity of restrictions which may be imposed on the use of different fuels is unknown. The refining industry has demonstrated its ability to shift yields and should be able to help equalize the combined military and civilian pressure on the various petroleum products. However, we may find one product, such as diesel fuel, becoming relatively scarcer than another, such as motor gasoline, as far as the civilian economy is concerned.

"4. The quality of certain petroleum products may be reduced considerably from today's standards. Also, special grade of fuels produced for individual customers will probably disappear.

"The users of petroleum products will do well to observe these conclusions and take appropriate action to create for themselves as much flexibility as possible in their operations in the event we should get into an all-out war.

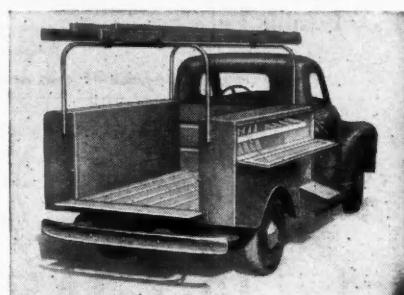
"1. They should maintain their equipment in the best possible condition and acquire all available knowledge on ways and means of fuel economy.

"2. They should not 'put all their eggs in one basket.' Wherever possible they should keep in operation, or available, equipment capable of using more than one type of fuel. If they are dieselizeing or converting to L.P.G., they

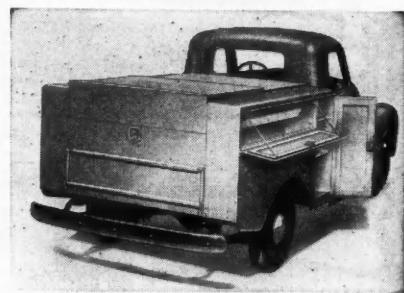
(TURN TO PAGE 234, PLEASE)

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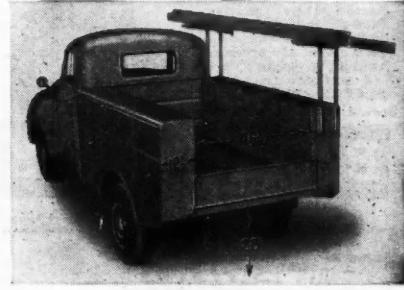
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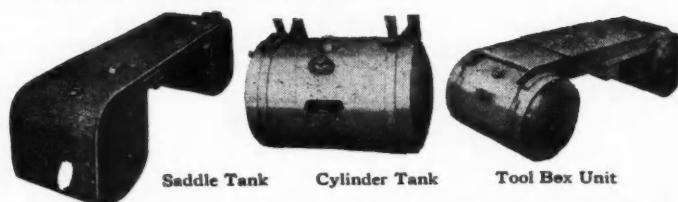


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GASKETS

Bus Men Mobilize

Continued from Page 233

would be wise to keep their old gasoline consuming equipment in case the other fuels become relatively scarcer.

"3. They should anticipate a possible moderate reduction in the octane number of the gasoline now being used and take appropriate steps to be prepared to use efficiently those lower quality products. They should also be prepared to abandon the use of any special fuels made only for them and not marketed generally by their suppliers.

"4. Wherever possible, it would appear to be a wise move to provide some storage for fuels, particularly diesel fuels, so that a cushion can be maintained against possible seasonal shortages or temporary scarcity created by severe weather or other unusual circumstances."

RUBBER—E. A. Stevens, Director of Purchases, B. F. Goodrich Co., in his discussion of wartime availability of rubber, covered all kinds of rubber products although, of course, the emphasis was on tires. Admitting the current situation was vastly better than at the beginning of the last war, he nevertheless, advised the transit executives that, "at this moment in history, the intelligent as well as patriotic thing to do, is to buy now only to fill essential current needs."

After sounding this note of caution, he explained that government and the rubber industry is making every effort to build a stockpile to take care of the worst possible situation. "The United States is in a far safer position now," he said, "with regards to rubber supplies and production of rubber products than in 1940, despite the fact that the nation's rubber consumption currently exceeds a million tons a year as compared with 650,000 tons 10 years ago.

"This change for the better did not just happen. It was planned that way."

Stevens then explained that the nation would have large stocks of synthetic rubbers to bolster transportation industry's needs. "In 1940," he said, "only 2500 tons of the 650,000 tons

(TURN TO PAGE 236, PLEASE)

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2. Selective Extraction removes the few impurities—leaves *all* the natural lubricating factors in the finished oil.
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Bus Men Mobilize

Continued from Page 234

consumed in the United States was man-made rubber, the Far East providing most of the balance. At that time, we had facilities for producing but 4500 tons of man-made rubber within our country's borders, while, today, the plant capacity totals 940,000 tons. The annual rate of man-made rubber production in the United States should approximate 800,000 tons during the early months of 1951 when the additional reactivated facilities are in full operation."

Further, he assured his listeners that as a result of much research by his company, and the industry, as a whole, man-made rubbers had many desirable properties.

In addition, he said, new production techniques permitted a pound of rubber to go further than a decade ago.

"This year's passenger tires," he said, "made with new, improved man-made rubber, combined with improved carbon blacks, are giving American drivers 15 to 25 per cent more mileage than in 1940. New manufacturing processes also are credited for part of this increase."

Commenting on the government order to limit the consumption of new rubber, Stevens said, "the permitted consumption of new rubber for civilian products during the last four months of 1950 will be at the annual rate of 1,080,000 long tons. When it is realized that the all-time record consumption of new rubber was 1,122,000 long tons in the year 1947, it will be seen that this first limitation is not very drastic."

"We believe that consumers should aid in rubber conservation also by proper care of their tires, watching inflations, avoiding overloading and preventing excessive wear which occurs with high speeds and unnecessarily severe braking of vehicles."

Stevens touched on Russia's stockpiling race. "We should like to see a crackdown by the British and Dutch on crude rubber shipments to Russia. We fear that the substantial purchases Russia is making publicly may be dwarfed by concealed purchases made through satellite nations. Diversion of rubber supplies from Russia to the United States would be in the highest interest of all free peoples at this critical time."

MANPOWER—Paul A. Rust, executive vice president, Connecticut Railway and Lighting Co., described the current manpower situation as follows: "The total employment in August approached 62.4 million—an all-time

(TURN TO PAGE 238, PLEASE)

BURNDY HYSPIKE

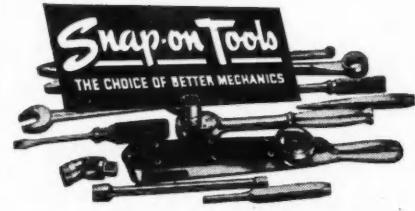
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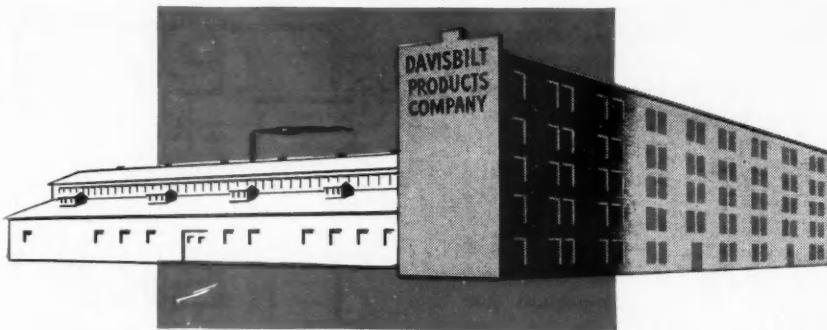
ZOLLNER MACHINE WORKS FORT WAYNE, IND.



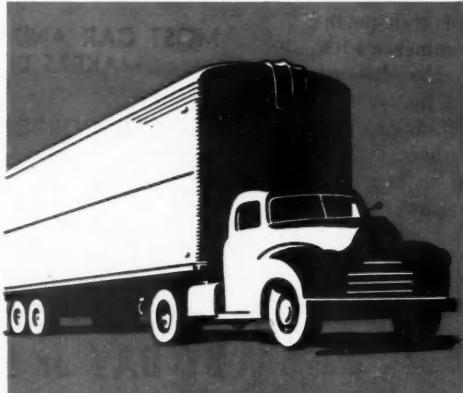
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An expanded engineering staff is at the service of America's public utilities and oil field operators to provide better and better truck bodies and equipment.

HIGHWAY

TRAILERS

On Every



Highway

Headquarters Edgerton, Wisconsin

Bus Men Mobilize

Continued from Page 236

high. Employment in industrial and commercial firms reached 54.2 million, a gain of 1.4 million from July. That was among the largest month to month gains. Unemployment fell to 2.5 million, the lowest point since January, 1949. The jobless level is considered almost a rock-bottom minimum.

"Evidence is found that what we knew as labor pirating in World War II has already started in certain more critical areas. More than three weeks ago, an aircraft plant in California was advertising for workers in our Bridgeport, Conn., newspapers.

"On September 6, the Army called for 70,000 draftees in November, a 40 per cent increase in one month, which may mean a raise in the authorized 1950 draft totals.

"All of this adds up to a 'must' that the transit industry recognize the pos-

sibilities of a real serious manpower pinch and make plans to meet it.

"In an effort to assist transit companies in making plans, the Association already has called upon you to take an inventory of your manpower. This means becoming aware of the status of all employees in all departments, in order that you may have some working concept of your manpower vulnerability. This is important not only for you to know but for the Association to know on an industry-wide basis, if it is going to make successful representations to official agencies on questions relating to manpower utilization and manpower withdrawals.

"We must not find ourselves again in the peculiar situation where a governmental control agency puts the production of transit vehicles on the critical list while literally hundreds of transit vehicles sit idly by because of the unwillingness of other governmental control agencies to recognize the essentiality of our employees, leaving us with insufficient manpower either to operate them or to repair and maintain vehicles already at hand. That happened in World War II."

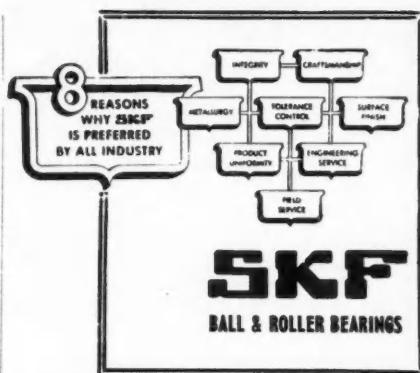
Rust then covered the major manpower problems encountered during the last war, such as discrimination in relation to other forms of transportation, the Department of Commerce's list of "essential activities," the list of critical occupations issued by the Department of Labor, the attitude of draft boards to these lists, and others.

"Further difficulties can be expected from some shifts of manpower from transit to war production industries where wage rates may be higher, long hours may make weekly take-home higher and the possibility of getting deferments or delays in call may appear to be better. Most of us know what that means and we again must be prepared to cope with it."

He called special attention to wage stabilization, about which he said, "what we need to do is make certain that the persons available for these (local wage stabilization) panels are competent to judge and pass upon our problems . . . who understand that transit cannot be bracketed with other industries for wage-stabilization purposes, since there customarily is only one company within a community; that wide fluctuations in service requirements within any 24 hour period make transit working conditions different from other industries; and that there are many other differences between wages and employment in the transit industry and wages and employment in other non-service, mass production industries."

END

Please resume your reading on P. 56



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